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PRESIDENT'S ADDRESS

THE LURE OF MEDICINE*

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To sharpen our appreciation of medical problems and obligations, to enhance our realization of our indebtedness to those who have gone before in so many widely different countries, to activate our enthusiasm for our work, and to strengthen our faith in the great victories yet to be accomplished, I propose to sketch briefly the growth of our knowledge of medicine up to the present time—the Golden Age of medical progress, the most evident fruition after some three million years of evolution, the era of the keenest interest, the greatest opportunity, and the most enthralling promise since the world began.

Medicine arose from the instinct of self-preservation and a sympathetic desire to help our fellow creatures. Primitive man in distress instinctively turned to the supernatural and thus developed the belief in good and evil spirits, religion, the priesthood, prayers, magic, charms, incantations, astrology, and divination.

In Egypt six thousand years ago, priest and physician were one, but we have Egyptian and Assyrian records four thousand years old that show considerable progress in medicine, especially in therapeutics, and an astonishing knowledge of hygiene and sanitation. Hebrew medicine is full of Egyptian and Babylonian teachings.

Greece gave us the art of accurate observation. It was perfectly natural for the knowledge of anatomy to develop in the Golden Age of Greek art, and to slumber until the Italian Renaissance, from Aristotle to Leonardo da Vinci. From 500 B. C. to the rise of the universities in Italy and France in the thirteenth century, to know Hippocrates was to know medicine. Even as late as the beginning of the nineteenth century, while modern clinical medicine was being developed in Paris by Corvisart and Lænnec, the medical students of Paris still had lectures on Hippocrates three times a week. Clear Greek thought was contaminated by Babylonian and Egyptian teachings of divination, astrology and magic in spite of the rationalizing influence of the Persians. Astrology was taught at Oxford as late as the sixteenth century, and still has its followers even in America.

The preservation of Greek medicine for the civilized world between the fall of the Roman Empire and the development of the universities we owe to the Arabs, whose intellectual voracity formed a striking contrast to the mental apathy of Huns and Goths.

The Arabs, however, added nothing to the knowledge of anatomy or physiology, but advanced the Egyptian work in chemistry and pharmacology, particularly by the introduction of mineral substance. New and important diseases were described and wonderful hospitals were developed.

About the time that Columbus was exploring the New World, Paracelsus, the Luther of medicine, was shaking the very foundations of the temple of Tradition, laying the corner stone of modern chemistry and preparing for the fall of alchemy, her ill-famed mother; and Leonardo da Vinci, whose intellect in its scope was second to none, perhaps not even to that of Aristotle, was secretly building for modern anatomy and physiology.

While the Pilgrims were founding the Massachusetts Colony, Harvey and Descartes were laying the foundations of the science of physiology, which had made little progress since the time of Galen, the greatest experimenter of ancient times. They broadcasted, as it were, the details of the circulation of the blood, discovered by Leonardo, with other teachings of the Italian universities, for the demonstration of which as well as for their own work, they introduced systematized animal experimentation into physiological investigation. Biochemistry has been a slow but natural sequence to the development of chemistry and scientific physiology.

In the latter half of the seventeenth and the first half of the eighteenth century, Sydenham and Morgagni, by preaching emphatically that "all disease could be described as natural history," and by correlating accurate clinical observation with postmortem dissection of diseased organisms, laid the foundation of modern pathology. Individual organs were at first regarded as the site of disease. Bichat, a brilliant young martyr to his professional zeal, directed attention to the tissues rather than the organs, and Virchow later brought pathological study home to the cell where it justly belongs.

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* Delivered before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

One of the important steps in the development of the science of pathology was the establishment of pathological museums by John Hunter. Virchow's greatest pupil, our William Welch, the revered and well beloved, whose influence upon the development of medical science cannot be overestimated, has covered the potentialities of physical or histological pathology. Little is left for his successors except to learn what he can teach them, and elaborate that as new discoveries make it possible.

The medical clinic developed in the little Dutch town of Leyden under the compelling wisdom of Franciscus Silvius, and its reputation soon spread to all parts of Europe. University students flocked to Holland, drawn, after Silvius, in the early eighteenth century, by the magnetic personality of Boerhaave, the great clinician, whose broad knowledge, personal charm, and success as a teacher remind us so much of our own admired Osler.

It was natural that the preachings of Sydenham, Morgagni, and Boerhaave should be followed by the appearance of great clinical teachers in different parts of the world, England, Italy, Holland, France, Scotland, Germany and the United States. At Paris, in the beginning of the last century, Corvisart and his famous pupil Læennec—as I have already mentioned—by a painstaking study of existing medical literature, a masterly application to the clinical material at their disposal, and a keen appreciation of the needs of the student, firmly established the spirit of modern clinical medicine.

Medical bacteriology rests upon the work of Louis Pasteur in the middle of the last century, ably seconded by the master mind of Robert Koch. Modern surgery may be said to have developed upon Lister's timely and logical application of the discoveries of Pasteur and Koch. Though limitless realms still remain to be explored in bacteriology, yet that branch of medical science, like histological pathology, may be said to be completely blocked out. Their fundamental principles have been established. They are no longer in the pioneer period.

A consideration of the great names in medicine up to the beginning of our own generation reveals the fact that almost invariably these men have been distinguished as men of general learning. Hippocrates was a great naturalist. Aristotle was the master of all branches of knowledge from logic and metaphysics to botany and comparative anatomy, possibly the greatest mind of which we have a record. Galen was distinguished as a sanitary engineer.

Avicenna, the Persian, tenth century rival of Galen, who preceded him by 800 years, was a devout Mohammedan, a mathematician, metaphysician, logician, lawyer, statesman and poet. He says in his autobiography that he found medicine an easy subject, and yet he codified all medical knowledge up to his own time in what Osler calls "the most popular medical textbook ever written," the "Canon of Medicine."

Roger Bacon and Albertus Magnus of the thirteenth century dominated the whole domain of learning and materially advanced the sum total of human knowledge and the brotherhood of man.

The accomplishment of Leonardo, in the late fifteenth century, challenges comparison with that of Aristotle himself, adding to all the sciences the arts of painter, sculptor, poet, and musician, with skill as an engineer, architect, and aëronaut. Paracelsus was a great chemist and a profound thinker, striking the first resounding blow against blind submission to the authority of tradition.

Copernicus, in the early sixteenth century, was the father of modern astronomy, while William Gilbert, Queen Elizabeth's physician, founded the science of electricity and was one of the leading logicians and astronomers of his time.

Bœrhaave, in the early eighteenth century, was a great botanist and chemist.

John Hunter, who gave his distinguished pupil, Jenner, the advice, "Don't think, try," was a great naturalist.

Of this list Aristotle and Leonardo were not physicians but made important contributions to the progress of medicine; the others are some of the members of our profession who have accomplished much in the advancement of other branches of human knowledge. For centuries the entire field of knowledge could be embraced by a keen intelligence, and up until the last generation medicine alone did not suffice to occupy fully an unusually active mind.

The science of medicine has now developed to such vastness that our greatest problem is the question of the most practical and efficient premedical and medical education. Instead of the physician having the time to explore all branches of scientific knowledge and possibly to make material contributions to several, he must make up his mind, if he wishes to rank in his chosen profession, to forego many of the pleasures and avocations which the business man or other professional men may enjoy. Furthermore he must cut out many subjects which, a few years ago, naturally belonged to medicine. Physiology, biochemistry, physical chemistry, bacteriology, and kindred subjects, while they are essential to medical progress, must be carried on by specialists who have neither time for, nor need of, a medical degree, but whose work must be carefully followed by the practitioner in order that he may assimilate promptly such results as have practical value for him.

Just here I wish to mention a specialty which rightly belongs to medicine but which has developed thus far as a sister profession. I refer to dentistry.

The rapid development of our knowledge of the relation of oral pathology to diseased conditions throughout the body places the consulting dentist in the same class with the otologist, laryngologist, rhinologist, and ophthalmologist, and makes it imperative that the consulting dentist shall have the same broad knowledge of, and experience in, general medicine that these other specialists should have.

The teeth of a nation are essential to the health of the nation. The fact that the majority of our children have defective teeth—improperly developed, irregular, and of poor material, is a national calamity that cries out for correction. The growth and development, as well as the care of the teeth, are problems of general medicine, of preventive medicine, of hygiene and dietetics.

Either the consulting dentist, the dental surgeon, must see to this or we must develop within our own ranks the oral specialist to take the place not yet satisfactorily filled by the dental surgeon. I say this in all kindness and with deep appreciation of what dentistry has done and can do for medicine. But I believe it will be mutually advantageous both to dentists and physicians, and greatly to the benefit of the human race, when some fair method is devised by which our brothers, the dentists, may become members of the broader profession.

Not only do a great majority of our school children show defective teeth, but more than 50% of the people about us show, in one or more respects, the effects of faulty nutrition, at some time in their lives. Many of these effects when once established are irrevocable. We appreciate but too well the futility of our therapy in many developmental conditions as well as in a large proportion of the results of infection. Thus the watchword of modern medicine has become prevention.

Preventive medicine built the Panama Canal. It is in a fair way to eliminate malaria, yellow fever, cholera, plague, typhus, typhoid, beriberi, scurvy, rickets, and many other diseases, and all this is happening during our generation. Crusades already organized, such as those against tuberculosis, venereal diseases, cardiac diseases, blindness, and infant mortality are bound to work incalculable good. School inspection, nutrition classes, prenatal classes, mothers' classes, diabetic classes, free periodic health examinations, and the present studies of the question of birth control—these are some of the most commendable activities of the apostles of preventive medicine, altruistic sociologists.

The mantle of the necromancer has been dropped from the shoulders of the medical adviser and he has become an educator, realizing that education is the most powerful weapon against disease and inefficiency.

The most vital subject in the progressive medicine of to-day is the subject of nutrition. Nutrition includes the study of growth and the action of the endocrine glands in health and in disease. If an ambitious young man with the proper spirit of patience, devotion and self-sacrifice—either for the alleviation of human suffering or for the advancement of pure science—seeks new fields to conquer, let him choose here.

Vital as the subject of nutrition is and has ever been, it was not until physiology and biochemistry had made great advances and the necessity of animal experimentation had been recognized and the biological method had been introduced, that nutrition could be studied scientifically. When the biological method for the investigation of foodstuffs was substituted for the chemical, optimal nutrition was found to consist of something more than digestibility and a proper supply of water, protein, fuels, and mineral substances. Thus the existence and importance of the so-called vitamines was established. When McCollum devised and put in operation his rat colony, he put himself in line with Paracelsus and René Descartes, who did so much to bring home to the thinking world the fact that wisdom springs from doubt, the observation of natural phenomena, and from experimentation, not from the study of tradition crystallized into authority. In the great field of preventive medicine, as well as in the field of therapy, nutrition is to take a larger and larger part. The rank and file of our profession are very slow to realize this fact.

Immediately upon the discovery of the existence and the importance of the vitamines, the so-called deficiency diseases—beriberi, scurvy and rickets — occupied research workers and flooded medical literature; but although there may be many other "deficiency diseases," still infant mortality, dental pathology, and general mental and physical inefficiency are far more important than such specific diseases, and they, too, spring most frequently and fundamentally from malnutrition.

The diet of a very large proportion of our people, as well as of most other peoples, has been and still is essentially wrong—wrong from the standpoint of the optimal development of body and soul. I repeat body and soul, for McCollum has demonstrated that by certain definite deficiencies in the diet of the mother rat, she can be made to neglect and even to destroy her young, thus breaking down the most fundamental instincts of motherhood, and by a correction of the diet the same rat may become a most exemplary mother. It does not require any imagination to deduce from the above the vast importance of faulty human nutrition in the causation of immorality and crime.

I have said that the subject of medical education is the most important problem which we have before us to-day. The aims of medical education are:

1st. The abundant supply of research workers in medicine and the contributory sciences.

2d. The adequate supply of teachers of medicine.

3d. The optimal supply of medical practitioners properly distributed to meet the needs of the people.

On this last topic, allow me to say a few words in closing.

The centripetal force that draws men to the cities—and with greater and greater attraction as the cities become larger and larger—leads to overcongestion and asphyxiation. This centripetal force must be offset. We need more farmers and more rural practitioners. Our government is taking wise and energetic steps to supply the former. I call upon the medical profession of the State of Pennsylvania to do their utmost to increase the latter. This you can do by a hearty coöperation with Dean Meeker in the excellent plan for the application of the university extension idea to postgraduate medical education, which he will now present to you.

ORIGINAL ARTICLES

THE BACTERIOLOGY OF HUMAN CYSTIC BILE*†

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PITTSBURGH

Much has been said in recent years relative to the bacterial flora of the human bile and gall bladder in health and disease. Our present-day knowledge of the subject has been evolved from analyses of human material and from the results of animal experimentation—chiefly on the rabbit. It is well established that certain microörganisms, notably the members of the colon-typhoid group as well as streptococci and staphylococci, can and do cause inflammatory processes of the gall bladder and bile ducts, just as Netter, Naunyn, Frænkel, Krause, Gilbert and Girode, Toida and others have shown that the bile from normal human gall bladders is sterile. But it has not been so clear, how these bacteria arrive at the gall bladder and what the subsequent pathological processes are. Nor is this altogether surprising. No viscus in the human body affords more different portals of entry for bacteria than the gall bladder. Then, too, the varying bactericidal, bacteriostatic and bacteria-enhancing properties of bile complicate the problem. Inasmuch as the observations on human bile have not kept pace with the more extensive ones associated with animal experimentation, it would seem justifiable to record the results of certain bacteriologic studies on *human* gall bladder bile. Moreover, these data derived from human material might serve to broaden our knowledge, not only of the types of microörganisms encountered but also of the relative incidence of these organisms and, at the same time, lend themselves to a comparison with the contributions of the experimental pathologist and bacteriologist. Furthermore, it is sound to expect that the results obtained from the investigation of bile from the gall bladder would form a more basic and accurate source of information that those gotten from a similar study of bile recovered by a more circuitous route. With these ideas in mind, the following analysis has been made as a preliminary report to a current study of parallel cultures of bile, gall bladder wall and gallstones in the same case.

During the past several years, 408 specimens of human bile have been cultured routinely in our laboratories. No selection of cases was made. The material was submitted by the surgeon at the time of cholecystostomy or was recovered from the removed, intact gall bladder shortly after operation. In those cases where the organ was removed, the microscopic diagnosis was available. In the majority of instances, however, only the bile was obtained so that the diagnosis was determined at the time of operation.

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 5, 1921.

† From the Bacteriological Laboratories, Mercy Hospital, Pittsburgh, Pa.

The method of examination was uniform, consisting of planting from one to two c.c. of bile, aërobically, on plain serum broth (PH 7.6), with subsequent segregation of colonies on human blood agar plates (5%), isolation on slants and identification on appropriate carbohydrate fermentation "sets." All streptococci were classified according to Holman. Sterile cultures were kept for at least five days before being discarded.

TABLE I

POSITIVE CULTURES

	Ac. Supp. Cholecystitis	Acute Catarrhal Cholecystitis	Chronic Cholecystitis	Chol lithiasis	Total	Per Cent of Growths
B. coli communis	11	12	16	12	39	18.0
B. coli communior	4	8	7	7	19	9.0
B. typhosus	7	7	2	5	16	7.4
B. paratyphosus	2	0	2	2	4	1.8
B. alkaligines fecalis	0	0	5	0	5	2.0
B. cloacae	0	1	1	0	2	1.0
B. Morgan I	0	0	1	1	1	0.5
B. Acidoformans	1	0	0	0	1	0.5
B. lactis aërogenes	7	0	1	0	8	11.5
B. acidi lactici	4	6	5	9	15	
B. Friedlander	0	1	1	1	2	
Chromogenic Gram Neg. Bac.	0	0	1	0	1	0.5
Staphylococcus aureus	2	4	10	3	16	7.4
Staphylococcus albus	4	2	7	2	13	6.0
Pneumococcus	1	0	2	2	3	1.3
Streptococcus hemolyticus	0	2	0	0	2	5.6
Streptococcus infrequens	1	0	1	0	1	
Streptococcus pyogenes	2	3	1	1	6	
Streptococcus anginosus	0	1	1	0	2	
Streptococcus equi	0	1	0	1	1	
Streptococcus viridans	1	0	1	0	2	11.5
Streptococcus fecalis	2	2	2	0	6	
Streptococcus mitis	0	3	5	2	8	
Streptococcus salivarius	0	2	2	2	4	
Streptococcus equinus	1	1	1	1	3	
Streptococcus ignavus	0	2	0	0	2	
Micrococcus tetragenus	0	0	2	0	2	1.0
B. xerosis	0	1	4	3	5	2.0
B. pseudodiphtheriæ (Hoffman)	1	0	0	0	1	0.5
B. pyocyaneus	2	0	2	1	4	2.0
B. proteus vulgaris	1	1	8	6	10	4.0
B. subtilis	0	0	5	1	5	2.0
B. mesentericus	0	2	4	2	6	3.0

The table is so arranged that the total of columns 1, 2 and 3 should equal the numbers in column 5, the case of cholelithiasis being recorded as an associated condition. In the sixth column, reading from above down, the brackets embrace the B. mucosus capsulatus, the hemolytic and the green streptococci, respectively.

A positive culture was obtained in 208 cases (51%), from which 215 organisms were isolated, there being seven instances where two different bacteria occurred in the same specimen. Of the 208 positive cultures, thirty-five were probably contaminators, leaving 44% as the incidence for pathogenic bacteria. Such microörganisms as staphylococcus albus, M. tetragenus, the diphtheroids, B. pyocyaneus, B. proteus vulgaris, B. subtilis and B. mesentericus were regarded as contamination except when they were associated, in pure culture, with a suppurative cholecystitis. Two hundred (49%) of the cultures were sterile. The ages of the patients ranged from 15 to 69 years. Sixty per cent were equally divided between the fourth and fifth decades of life. Seventy-one per cent were females and 29 per cent males.

As can be seen from Table I, there is nothing remarkable about the types of bacteria isolated, all readily falling into the ordained categories of well-known organisms. B. coli communis was encountered in 18 per cent of the positive cultures and B. coli communior in 9 per cent; B. typhosus in 7 per cent; B. paratyphosus and B. alkaligines fecalis in 2 per cent each. The members of the B. mucosus capsulatus group, including B. lactis aërogenes, B. acidi lactici and B. Friedländer occurred in 25 instances, or 11%. Staphylococcus aureus had the same incidence as the typhoid bacillus—7%, while staphylococcus albus appeared to be a pathogen in 3% of cases. Streptococcus viridans was found twice as frequently as hemolytic streptocococci, the former being isolated in 12 per cent, the latter in 6 per cent. Strangely enough, the presence of pneumococci was revealed in three cases, or 1.3%.

In a community where the morbidity from typhoid and paratyphoid fever is low, it is not unusual that B. coli has the highest incidence. Other investigators, as Brian, Funke, Hartman, Naunyn, Reimann,[1] Williams, and Windsor have found B. coli predominating in cultures from human gall bladder bile. The tendency to interpret gall bladder disease in terms of the typhoid bacillus has been too strong. While there is no doubt that cholecystitis, with or without cholelithiasis, complicates or follows typhoid fever even more commonly than is generally suspected (Chiari, Kolle and Hetsch, Foster and Kayser, and Kutscher), one must not forget that those microörganisms which constantly inhabit the gastro-intestinal tract are the most frequent offenders in biliary tract infections (Mignot). Granting that virtually every case of typhoid fever is associated with a cholecystitis, it does not necessarily follow that a future diseased gall bladder will be the direct outcome of B. typhosus. Meyer, Neilson and Feusier have shown that thirty to forty per cent of rabbits intravenously inoculated with typhoid bacilli recover from their infection in the first month after injection, while about ten to fifteen per cent retain typhoid bacilli in their gall bladders for six months to one year, occasionally longer. These workers have observed that 20 to 30 per cent of typhoid bacilli intravenously inoculated into the rabbits are found in the liver in from 10 to 15 minutes after inoculation, and they get to the bile, as well as the gall bladder wall, very rapidly, Chirolanza recovering them in this organ in rabbits within two hours after injection by vein even when the cystic duct was tied. At the same time it must be remembered that the typhoid bacillus can remain in the gall bladder without evoking either immediate or delayed symptoms (Gay). There is also the possibility of a post-typhoid cholecystitis due to another organism, as indicated by Cushing, who described five such cases where pure cultures of B. coli were obtained. There were three similar cases in our series, where B. acidi lactici, streptococcus fecalis and streptococcus mitis were found in the gall-bladders of three patients who gave history of a previous attack of typhoid. In addition, it has been demonstrated experimentally by Baron and by Meyer, Neilson and Feusier that in the chronic cholecystitis of animals, B. typhosus may be replaced by B. coli or streptococci. On the other hand, B. typhosus has been recovered from cystic bile in individuals who apparently have never suffered from typhoid (Cushing). So it can be seen that the permutations are manifold. It is pertinent for us to realize that the subject is not an ironclad one, but very flexible and that due recognition should be given to bacteria other than B. typhosus and B. paratyphosus, especially to colon bacilli.

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[1] Loc. cit.

This is also true of the components of the B. mucosus capsulatus group, which were encountered in 11 per cent of cases. A still more striking feature rests in the fact that of the eight instances where B. lactis aërogenes was isolated, seven were definitely empyemata. This is another example that we are too prone to underestimate the pathogenic properties of this family of bacteria—the same obtaining in infections of the urinary tract. We have been impressed repeatedly by the invasive qualities of these capsulated, Gram-negative bacilli, as have such workers as Clairmont, Ranzi, Wehring, Briegel, Breiml,[2] and Courmont and Dujol.

That green streptococci occurred twice as frequently as hemolytic streptococci seems paradoxical. One would be tempted to explain this finding if the streptococcus fecalis—a normal inhabitant of the intestinal tract—had predominated, but half of this entire group consisted of streptococcus mitis and streptococcus salivarius, organisms which are ubiquitous in the upper respiratory passages. This is an extremely interesting and, we feel, significant observation which, in itself, could be made the text of a lengthy discussion on the modus operandi of gall bladder infections. Deaver and Reimann, in studying the cultures of 45 gall bladder walls, found green streptococci in twenty per cent of instances, whereas no hemolytic streptococci were encountered.

In three cases the pneumococcus was isolated. With the knowledge that, as a rule, human bile is bacteriolytic for these organisms, this may appear to be an erroneous finding. In one case there was no bile present, it having been supplanted by a purulent exudate. In the other two, the pneumococcus was recovered from the bile, gall bladder wall and the nucleus of a calculus, so that the evidence that the pneumococcus was the infecting agent is strong. The fact that various biles differ in their bacteriolytic properties, some being very weak in this regard, coupled with the fact that known foci occurred in the gall bladder wall, would serve to explain this bacteriological finding, as would the acquisition of protective substances by the bacteria themselves. Brion and Kayser have reported pneumococcic infection of the gall bladder, while Anders has called attention to three cases complicating pneumonia.

When viewed broadly, the organisms were found in acute cholecystitis in a somewhat higher percentage than chronic cholecystitis. B. coli communis had approximately the same incidence in each, while B. typhosus occurred seven times as frequently in the acute forms, although B. paratyphosus caused as many chronic as acute inflammatory processes. The members of the B. mucosus capsulatus group were isolated from over twice as many acute as chronic conditions. As mentioned above, this was particularly striking in the instance of B. lactis aërogenes, where empyema existed on seven occasions out of eight. Staphylococcus aureus predominated in the chronic forms, whereas hemolytic streptococci were five times commoner in the acute processes. On the other hand, the green streptococci were about equally divided between the two types of inflammatory reaction. An acute or chronic suppurative cholecystitis was found in less than one-fourth of the cases yielding organisms. Calculi occurred in 65 per cent of those exhibiting a chronic process while about 10 per cent of the 208 cases of positive cultures gave a history of recurrent attacks. Of the 200 sterile cultures, 85 per cent were diagnosed chronic cholecystitis, of which 41 per cent showed cholelithiasis. In seven instances calculi were found in the absence of any demonstrable inflammatory process in the gall bladder.

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[2] Kolle u. Wassermann: Handbuch J. Path. Mikro, 1913, VI, 539.

Usage has decreed that we speak of the portals of entry of microörganisms to the gall bladder in terms of ascending, descending and hematogenous routes. The term "ascending" is particularly unfortunate because, contrary to the popular idea, the infective agent rarely ascends by way of the lumen of the common bile duct from the duodenum but by the periductal lymphatics, in a manner similar to certain ascending infections from the urinary bladder along the periurethral lymph channels to the renal pelvis, although Else, after experimenting with Belgian hares and dogs, concluded that motile organisms can and frequently do reach the gall bladder through intestines by ascending the common and cystic bile ducts. On the other hand, Meyer, Neilson and Feusier were unable to produce gall bladder infections by the introduction of enormous doses of typhoid bacilli into the duodenum of rabbits, close to the papilla of Vater, confirming the results of Hailer and Ungermann. Moreover, Cushing and Livingwood found the empty duodenum to be frequently sterile, while Thiroloix and Debré showed, experimentally, that an additional factor, as trauma, previous inflammation, calculi or extreme stagnation was necessary for a true ductal ascending infection, save in exceptional cases where intestinal bacteria were carried up the common bile duct by Entamebæ. So it would appear that ascending infections of the gall bladder play a minor rôle, being seen most commonly in those instances where indifferent streptococci, staphylococci and colon bacilli travel up the lymphatics from the intestines after manipulation of the structures involved.

The other two accredited routes of infection, the hematogenic and hematohepatogenous, or "descending," are more important. Meyer and his associates, in a recent exhaustive experimental study of typhoid-paratyphoid carriers in rabbits, found that about one-third of all rabbits which received large doses of typhoid bacilli, got the infection through the terminal capillaries of the mucosal villi, where the primary lesion was a bacterial embolus. These authors stress the importance of the second avenue of approach, the hematohepatogenous, attention to which was directed first by Birch-Hirchfield, and which has been verified repeatedly by many ingenious experiments. This conception, of course, entails the previous invasion of the liver, to which bacteria may come either by the hepatic artery or portal vein, usually the latter. Despite the irregular results obtained by Carmichael and by Else, who introduced microörganisms into the portal vein, it has been established that bacteria inoculated intravenously or into the portal veins of rabbits appear in from two to fifty minutes in the bile. The intact, uninjured endothelium between the vascular capillaries and the bile ductlets is a formidable barrier which renders it very difficult for bacteria to pass from the blood stream into the bile channels. As Sherrington has indicated, it is only after the integrity of this endothelium has been assailed by deleterious agents, most commonly the soluble toxins of microörganisms, that such a transit can occur, so that it would appear that damage to hepatic tissue, as a rule in the form of focal areas of inflammation or necrosis (Blachstein), is a precursor of the appearance of bacteria in the intrahepatic bile current. In this regard, Meyer, Neilson and Feusier think it is advisable to look upon the biliary tract as an excretory channel and to regard the cholecystitis more as a sequel to than as a source of the continual and repeated infection of bile. Although hepatic duct bile exhibits certain germicidal properties, organisms which enter it in representative numbers find but little difficulty in entering the gall bladder bile, which may be bacteriostatic for a short time but which is rarely bactericidal. Once in the gall bladder, the bacteria multiply, invade the mucosa and spread throughout the wall along the lymphatics by the transverse route. Contrariwise, in those instances where the infection begins in the wall as a result of blood stream infection directly, the cystic bile is secondarily infected after dissemination of the microörganisms by way of the lymphatics.

While we realize that the analogy is subject to criticism, we cannot refrain from comparing the results of our own statistics with those of Meyer. As had been stated, Meyer and his collaborators found that about one-third of the rabbits inoculated with typhoid bacilli received the infection through the terminal mucosal capillaries and the other two-thirds by the hematohepatogenous or descending route. From Table I it will be seen that those organisms which are known to frequent the intestinal canal, notably the colon-typhoid group, the B. mucosus capsulatus group and streptococcus fecalis, were encountered three times as frequently as those bacteria generally found in a more distant region, as hemolytic streptococci, the green streptococci, save S. fecalis, and pneumococci. It has been shown by Adami and others that the liver is constantly the recipient of intestinal bacteria, so that it is our belief that the preponderance of these organisms in our series is confirmatory evidence, as based on a study of human material, of the results of animal experimentation as reported by Meyer, Neilson and Feusier.

The factors which govern the localization of bacteria in the gall bladder with the production of a cholecystitis are numerous, depending on local and constitutional conditions. The alleged elective affinity and cholecystotropic properties of streptococci, as reported by Rosenow and by Brown, have not found confirmation in the results of rabbit inoculation by Meyer, Neilson and Feusier, using typhoid and paratyphoid bacilli, or by Deaver and Reimann using green streptococci isolated from inflamed human gall bladder walls.

In conclusion, we have found:

That of 408 routine cultures from human gall bladder bile, 208 (51%) showed a growth and 200 (49%) were sterile.

That the types of microörganisms isolated fell within well-known groups of bacteria of which B. coli was the most frequent, although due significance should be given B. typhosus and B. paratyphosus as well as other members of the colon-typhoid group.

That the members of the B. mucosus capsulatus group can and do give rise to virulent gall bladder inflammatory processes.

That green streptococci occurred twice as frequently as hemolytic streptococci, the former being associated with a chronic type of cholecystitis oftener than the latter.

That types of bacteria isolated, their relative incidence and usual habitat can be made to corroborate the statement of the experimental investigators.

That the two most important portals of entry of bacteria to the gall bladder are the hematohepatogenous and hematogenic, of which the former is the more frequent and important.

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DISCUSSION

Dr. Stanley P. Reimann (Philadelphia): I might say, first, that our statistics of gall bladder cultures (that is cultures from gall bladders that had been removed) agree with those of Dr. Richey. Further than that, not only did they agree in the general figure, forty per cent positive, but they also agreed in the approximate number of colon bacilli, or whatever other organisms happened to be present.

I am glad that he brought out the idea of the descending route of infections of the gall bladder. This was emphasized years ago by Adami, who concluded that bacteria passed through the portal vein, and that they and their products were excreted in the bile. The recent work by Meyer seems to show again that one route of infection is through the blood of the intestinal tract, up to the liver, and down to the gall bladder, and another route is up the common duct; but this is probably not frequent, except with parasites of certain types. Infection from the duodenum by way of the common duct probably does not travel along the lumen, but through the lymphatics in the walls of the common duct in a manner similar to that by which infection passes from the bladder to the kidneys.

Finally, Dr. Richey has not emphasized, but I am sure will agree with me, that infection of the wall of the gall bladder is very important. In the studies that we made, we ground up the wall, and found streptococcus viridans. This shows one reason why clinical infections will recede and be followed by others. This ability of streptococcus viridans to remain latent is well known. I have no doubt that the subject will be taken up in the Surgical Section; and that the American Surgical Association will take up the question, especially with reference to backing up through the lumen of the common duct or by way of the lymphatic channels in its wall.

Dr. Richey (in closing): That Dr. Reimann, working independently, obtained results which closely correspond to ours, both in the types of microörganisms isolated and in their incidence, is encouraging and, I think, significant that the bacterial flora of the diseased gall bladder has to do with well-known forms. I am glad that he emphasized the multiplicity of infective foci in the gall bladder wall and their tendency to persist. Furthermore, it is interesting to note that members of the streptococcus viridans group were not uncommonly isolated from these lesions. For some time past, we have been culturing specimens of bile, macerated gall bladder wall and nuclei of stones from the same case, where the intact organ has been removed at operation. As yet, the series is not large, but the findings to date indicate that, in a certain percentage of cases, organisms are recovered from the wall which cannot be found in the bile or calculi.

SUBJECTIVE SYMPTOMS OF THE CARDIAC ARRHYTHMIAS*

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During the past few years considerable attention has been paid to the cardiac irregularities and much effort and time has been spent in learning to differentiate them by methods of precision. As a result of the studies we have now arrived at a position where we are able to diagnose and to understand thoroughly, in a majority of the cases, just what is going on in the heart when these irregularities occur. With instruments of precision it is possible to determine not only all the usual types of irregularities but also the rarer ones and those in which two or more of the irregularities occur synchronously. The electrocardiograph and the polygraph are, however, instruments which are not available to everyone. The former is an extremely expensive instrument and requires a certain amount of technical knowledge in order to run it, as well as a clear insight into cardiac physics to interpret the tracings. The latter instrument is time-consuming and the information that we get is often deceptive nor is it possible to learn to interpret these tracings without very careful study. It is for these reasons that the usual methods of physical diagnosis have been accentuated by many authors in order to make it possible for the average individual physician to differentiate the diagnoses of the seven main types of cardiac irregularities. But here again great stress is laid upon physical diagnosis and while we believe that the objective findings are of extreme importance it will be our endeavor to show you that the subjective symptoms are also of importance in diagnosis. It is astonishing to find how frequently patients are able to note the course of an irregularity and how frequently we can judge from the patient's description just what this irregularity is. In fact there is one type of irregularity, paroxysmal tachycardia, which is often diagnosed solely from the patient's symptoms.

We will take up seratim the subjective symptoms in the seven types of irregularities and discuss each fully. Our work is based on special effort to elicit their own subjective symptoms from the patients with cardiac irregularities who presented themselves at the heart clinic of the University Hospital in the past six months.

(1) *Sinus Arrhythmia.*—This type of irregularity is practically always physiological and for this reason the patient is unaware of any deviation in the rhythm of his heart. The irregularity is of no importance and in only one or two cases have we ever seen patients who have noted any change during respiration. One patient has told us that if he took a deep breath he would sometimes feel his heart go faster, otherwise we have never noticed any subjective symptoms in this irregularity.

(2) *Paroxysmal Tachycardia.*—In this type of irregularity which is relatively frequent and seen probably more often than realized, the subjective symptoms are of great importance in making the diagnosis. Probably no other irregularity can be diagnosed so definitely from the statement to the physician of the patient's complaints. In fact it might be said with a great deal of truth that this type of irregularity is diagnosed more frequently by the patient's symptoms than by any other method, as it is not always possible to catch the patient during the course of a paroxysm, particularly if it is only a short one. The last six months at the University Hospital dispensary we have seen five patients with this condition. We could include more in all probability, but these five have been proved by electrocardiographic tracings. The onset of the paroxysm is usually very definite and the patient is very well aware of it. Very often the patient will tell you that just before the paroxysms he becomes extremely nervous, fearful and apprehensive and then the attack starts. This is quite a common finding and differs from palpitation in which there is an absence of this characteristic nervousness and dread of the impending phenomenon. Furthermore, they tell you that they can not only tell when the attack starts but also when it stops. We have seen patients who can say "There it goes," and an attack commences, and "now it has stopped," when it ceases. During the attack the patients frequently notice that they are short of breath, complain of inability to work and a distinct inability to do things which require

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any muscular effort. We have noticed two cases in which the patients themselves noted just before the attack that they would have a sequence of ventricular extrasystoles lasting five or ten minutes, in which the heart could be felt as distinctly irregular. Then the attack would come on and the patient would be relieved completely of the subjective symptoms of the extrasystoles. This is an observation we have not seen reported elsewhere. We have had one patient describe his attacks as "a rolling ball sensation in the abdomen which caused the heart to beat too fast and so would become paralyzed." The patient noted a great feeling of relief when the attack would stop. Two patients had learned that some simple procedure would often stop the attack, such as merely drinking water.

(3) *Auricular Flutter.*—We have seen only three cases in the heart clinic in the past six months. These cases presented no obvious subjective symptoms except those associated with rather exaggerated cardiac incompetence. This is, we believe, the usual finding. In this type of rhythm it is impossible to make a definite diagnosis without electrocardiographic methods. One of our cases was quite interesting. Under the influence of digitalis the patient went from fibrillation to flutter, and with the onset of the flutter there was a marked improvement in all his subjective symptoms. He had absolutely no complaints, no evidence of cardiac insufficiency. Another case on the contrary suffered whenever the least attempt was made to make any muscular or physical effort.

(4) *Auricular Fibrillation.*—We have seen twenty cases in the heart clinic in the last six months, all verified by the electrocardiogram. Before discussing more in detail the subjective symptoms of these patients it is interesting to note that a certain percentage of them are absolutely free from any subjective symptoms as well as any noteworthy objective findings. Needless to say these are the cases in which there is a slow ventricular rate. These patients will go along for years without any abnormal symptoms referrable to the heart, and in fact they will be apparently in perfectly good health. The fibrillation in these cases is apparently an additional evidence of the myocardial degenerative changes that are present. The symptoms that do arise in the course of auricular fibrillation are of two types: in the first place there are the symptoms that occur at the onset, and those that occur during the course of the continuation of this irregularity. The symptoms in the onset we find, on analysis of our cases, to be probably the most typical that occur in auricular fibrillation. The majority of our patients could tell very definitely when their onset started and several of these cases had been seen before their auricules had started to fibrillate and had then come in with fibrillation. We are convinced that the patients can tell quite definitely when their symptoms start. The most frequent symptoms at the onset are precordial pain and general weakness together with, at times, the complaint of shortness of breath. Two of our cases noted the onset with palpitation and gastric symptoms. One of these patients thought that his trouble was entirely gastric in origin. Still another patient was troubled with palpitation severe enough to cause him to awaken and yet not associated with any definite pain. He complained also of a beating sensation in the abdomen. Another patient was awakened by violent, severe precordial pain in the night, and the next day when we examined him he was found to have developed fibrillation. Another patient traced his onset to severe muscular effort. He lifted a heavy weight and was unable to continue work after this straining effort on account of marked epigastric pain, shortness of breath and weakness; and the weakness was the symptom which was most pronounced. Two patients traced their onset to cerebral attacks. One fainted suddenly, after which he felt very weak, tired and generally done up. Another noted dizziness with the same symptoms afterwards. In a certain number of cases we could fix no definite time of onset of the fibrillation, except that on a definite date these patients noted that, whereas they had been feeling fairly well, they had developed rather suddenly a general weakness. This seems to be an extremely important complaint—the feeling of being tired all the time. During the course of the disease the most frequent outstanding symptom is precordial pain. This was complained of in seven of our patients who came in without previous treatment. This pain cannot be spoken of as true precordial pain; it is rather a sensation of oppression, a feeling of discomfort in the region of the pericardium and not the pain that we associate with true angina. As we have said, seven of our patients came in with this as their chief complaint, or if not their chief complaint, one of their major complaints. In two cases it was the only complaint. It is interesting to note that under the influence of digitalis, although there was no cessation of the irregularity, this sensation of oppression cleared up very promptly. There is one other point that we wish to call attention to in connection with the symptoms in the course of auricular fibrillation, that is that the

patients frequently go from fibrillation to normal rhythm without any amelioration of the symptoms, showing very definitely indeed that the symptoms cannot be said to be due to the abnormal rhythm but rather to the myocardial insufficiency that is present.

(5) *Extrasystoles.*—This is a very frequent and common type of rhythm, and one which is of relatively minor importance, at least the concensus of opinion of the present day seems to be opposed to the idea that extrasystoles themselves are anything more than a moderate derangement of the cardiac mechanism. Unfortunately it is one of the types of irregularities of which the patient is extremely conscious, which causes the patient a certain apprehension and fear and which is often extremely difficult for the physician to deal with. Auricular extrasystoles are usually symptomless. The ventricular extrasystoles are the type that are noted or of which the patient is conscious. They are probably conscious of these on account of the long interval which follows the extra beat, or because of the succeeding strong, powerful impulse. The descriptions that we have gotten of these sensations are usually quite graphic. We have found that the patients usually have a very appropriate term to describe their sensations. We have received from the patients terms descriptive of their sensation such as the following: They feel at times they say as if "the heart were turned over," as if it "flopped," "as if it dropped a beat," which, of course, is a very accurate expression. They complain at times of "a feeling of emptiness in the heart region" and as if the heart had stopped completely. One patient described the sensation as if "something clutches my heart and then lets go." Several of our patients describe the sensation by the term "palpitation" which, of course, is not palpitation in the sense that we ordinarily understand it. This type of irregularity is, of course, of minor importance, but as MacKenzie says, "the fear of the unknown often makes the patient, as well as the physician, apprehensive."

(6) *Heart Block.*—We have not seen any true cases of heart block in the heart clinic that have any symptoms referrable to this condition. In some of our cases, however, we have noted that patients complained of attacks of dizziness when the block was prolonged. It is well to bear in mind that heart block is one of the rare causes of this symptom—dizziness. The characteristic picture of Adams-Stokes disease when there is complete block is too well known to need description. In this type of irregularity without the Adams-Stokes syndrome we have noted no symptoms except those of cardiac insufficiency, a well-marked insufficiency at that.

(7) *Pulses Alternans.*—This is a type of arrhythmia which is rare and of which little need be said in the present connection. It can be diagnosed most accurately with the sphygmotonometer and the subjective symptoms need not be dwelt upon.

DISCUSSION

Dr. James D. Heard (Pittsburgh): At the time of Hippocrates diagnostic methods were simple. They consisted almost entirely of consideration of symptoms. Diagnosis based almost exclusively upon symptoms was not superseded by other methods until comparatively modern times. With multiplication of laboratory methods and of instruments of so-called precision, attention to the patient's complaint has, in many instances, become perfunctory, and thus a valuable source of information has frequently remained unexplored. The vicious habit of leaning too heavily upon the laboratory is exemplified in the heart station. Physicians who know only a little about electrocardiograms are divided into two camps, either they think that the electrocardiogram can do everything in the way of diagnosis, or they accuse electrocardiographers of thinking that the electrocardiogram can do everything in the way of diagnosis. As a matter of fact, the electrocardiograph is an instrument of great importance, but its field of usefulness is limited. One valuable thing that it has done is to make possible a diagnosis of the arrhythmias as based upon disorder of mechanism. A new field of research has accordingly been opened, namely, the association of certain symptoms with arrhythmias, the nature of which could be subsequently proved by laboratory methods. As a result we are now able to diagnose one of the arrhythmias, paroxysmal tachycardia, by symptoms alone, while a large percentage of some of the other types of irregular heart action can be recognized by clinical methods alone.

Sinus arrhythmia is seldom noted by the patient. No symptoms are produced, except in extreme instances, and the patient is fortunate if the irregularity of heart action passes unnoted, since the discovery of even this physiologic irregularity is only too often the cause of needless alarm, leading perhaps to useless medication and harmful restriction. On the other hand, temporary standstill of the whole heart may result in fainting attacks, together with slow rates of irregular heart action, which may be accompanied by symptoms such as dizziness, feeling of faintness, cold extremities, and the like. In a patient whom I observed for a brief period the electrocardiogram showed an occasional R-R interval of 2.04 seconds, while heart rates as slow as 18 per minute were said to have been observed by other physicians. As atropin is capable of taking off excessive vagus effect, a ready means of diagnosis is at hand in cases of this type.

Paroxysmal tachycardia has already been referred to as readily recognizable from history of sudden onset and sudden offset of previous attack. The irregular heart action noted before and after attack has, in my experience, not been due to ventricular premature contractions, but to premature contractions arising in auricle or in junctional tissue.

Auricular flutter and auricular fibrillation may be present and yet the patient may complain of no abnormal sensations. On the other hand, the patient may complain of palpitation, precordial pain, extreme weakness and other symptoms brought on by varying degrees of decompensation. While it is true that the electrocardiogram is usually necessary to diagnose flutter, nevertheless such diagnosis can often be made by polygraph or may be made inferentially when various rates have been observed, all of which have a common denominator. While there are no symptoms characteristic of auricular fibrillation, nevertheless at least nine-tenths of all cases can be recognized without the use of laboratory methods. Of eleven cases of transient auricular fibrillation recently reported by Heard and Colwell, the onset of fibrillation was unnoticed by five patients. In three, there was an increase of previous distress. In three others, distress occurred in patients who had had no disagreeable symptoms during normal mechanism. I have not found pain as a common complaint in fibrillation patients unless there was coexisting coronary disease. On the other hand, onset of fibrillation may be accompanied by gastric distress and vomiting which may be erroneously ascribed to gall bladder or appendix.

The complaint often made by patients suffering from premature contractions that they feel as though the heart were turning over, is a very suggestive one. On the other hand, the physician should bear in mind that ectopic ventricular beats producing coupling in over-digitalized patients usually pass unnoticed by the patient. Hence, this evidence of over-digitalization should be routinely sought for.

Latent block presents no symptoms other than those due to associated conditions. Hence, branch bundle block and so-called arborization block should be sought for in cardiosclerosis.

There are no symptoms which occur as a direct result of alternation of the heart. Demonstration of the presence of this serious disturbance of mechanism should be routinely sought for by physician and surgeon alike, since the presence of this arrhythmia carries with it a distinctly unfavorable prognosis in cases where heart action is not accelerated.

While the consideration of symptoms alone may be sufficient to make a diagnosis in paroxysmal tachycardia, and may give strong presumptive evidence as to the presence of other arrhythmias, nevertheless the method fails in affording even suggestive evidence as to the presence of others. Hence, in nearly all cases symptoms must be considered in association with physical signs, and in the case of pulsus alterans, special search by the cuff method, the sphygmograph or the oscillometer is required.

Dr. Musser (in closing): I have very little to add. I think that the important thing we find by the study of the subjective symptoms of any patient is that we are able, in most cases, to get a tremendous amount of valuable information. I believe that a careful history is something the average doctor is likely to skip over. It is certainly so with students, who want to get their stethoscope on the chest right away, and have not the patience to sit down and talk with their patients.

These cases that we have reported were all controlled by electrocardiographic methods. The question was asked by someone, but I thought I had mentioned it in the paper.

A STUDY OF THE HEART CASES IN THE PEDIATRIC CLINIC AT JEFFERSON HOSPITAL*

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The object of this study is not for the purpose of imparting new information on a subject already much discussed, but to bring out important facts regarding this class of cases, and if possible, to stimulate renewed interest in an old subject. Cardiac children with their poor nutrition and undevelopment, are a pitiable sight. Upon first thought they seem to be hopeless cases. Their care has been haphazard, and in many instances improper. As their lives have been restricted almost to the point of uselessness, they have been a burden to their families and to themselves. Their education has been neglected. They have asked for help that we have not known how to give. In the milder cases their lives have been unduly restricted. In the severer cases, we have been pessimistic about an early break. They have wandered from doctor to doctor, from hospital to hospital, without finding help. They are admitted to the ward for recuperation. They recover somewhat and are discharged, and left to their own devices, only to return in a short time with another break in their compensation, and thus the cycle continues.

This study is based on the thirty cardiac cases treated in the hospital dispensary during the past two years. In this period 1,187 various cases have received treatment, thirty of whom, or .02%, are definite cardiac cases. Holt says that 2% of children of school age have cardiac disease. Halsey,[1] in a study of 44,000 school children, found one-half of one per cent with cardiac disease. Their visits to the dispensary during this period have been very irregular. In some cases the doctor has requested a too frequent return and the parent has become discouraged because of the lack of progress. In other cases, the parents failed to coöperate.

Age: Eleven of the cases were five years old or under. Nine of the cases ranged from six to eight years. Ten of the cases from eight to twelve years. Koplik[2] states that "heart disease is less frequent before five years of age than after." Holt[3] says that this disease "is very rare under three years of age, and is greatest from six to twelve years of age." Graham[4] in his textbook states that "heart disease is more frequent after five years of age."

Sex: There were fifteen males and fifteen females studied in this group. Four of the males were under five years of age, one female was under five years of age. Eleven males were over five years, and fourteen females over five years.

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

Associated diseases: The most frequently associated disease in this series comprises the rheumatic group, which includes acute rheumatic fever, the indefinite "rheumatic pains" and "growing pains." Thirteen of the cases belong in this group, showing rheumatic manifestations alone. In some the onset was marked by rheumatic symptoms; in others the rheumatic symptoms followed the onset of the cardiac disease, if the history can be relied upon. Four of the cases give a definite history of "sore throat." Four of the cases showed chorea, associated with rheumatic fever. So, including the last two groups, there would be a total of twenty-one of the cases, or 70% with a history of rheumatic manifestations alone, or accompanied by another disease. Several of these cases, with the most advanced cardiac disease, gave a history of only mild rheumatic attacks, and some with a history of severe rheumatic disease showed a heart in comparatively good condition. It seems reasonable to believe that the severity of the cardiac disturbance occurring in the mild rheumatic cases can be accounted for by the fact that the patient was not confined to bed, while in the severe rheumatic cases, they were immediately put in bed, and the heart put at rest. Their history coincides with this idea. Two of the four chorea cases were very severe, necessitating their admission to the ward, and the other two were very mild, showing only general restlessness and slight twitching of the hands, fever, and cardiac disease. One case, a boy of four years of age, rated as a mild case of chorea, showed marked hypertrophy of the left heart on percussion, which was confirmed by x-ray examination. His exercise tolerance one year after onset was normal.

There was one case of influenza in this group. The history of tonsillitis was, in some of the cases, very hard to secure, but an examination of the throats of this series confirms the belief that it is a very frequent offender. So the four cases of tonsillitis definitely associated with the onset of the cardiac condition is probably too small.

Eight cases showed badly diseased teeth; two gave a history of diphtheria; one of pneumonia; one of otitis media and one of tuberculosis.

Symptoms: Fourteen of the patients showed an elevation of temperature on the first visit to the dispensary, the temperature ranging from 99° to 103°, averaging 100°. In a number of the cases the increased temperature was evidently caused by an associated bronchitis or acute tonsillitis. Eleven of the cases did not complain of any symptoms relative to the heart, but came to the dispensary for treatment of one of the associated diseases, rheumatic fever, chorea or tonsillitis. In the others the most constant symptoms were dyspnea, precordial pain and rheumatic pains referred to various parts of the body. Precordial pain was present in seventeen of the cases. Dyspnea was present in seventeen of the cases. "Rheumatic pains" were present in nineteen of the cases.

Nutrition: Their nutrition was determined by their weight and height as compared with the average for the same age. Only five of the cases showed good nutrition. The others were undernourished, with an average of ten pounds underweight.

Cardiac enlargement was determined by percussion, and in doubtful cases by the help of the x-ray. Much has been done in recent years to check up percussion findings with the roentgen ray, and to perfect a method of obtaining accurate outlines. Percussion outlines in adults are often erroneous, but this is not true in children, unless the chest walls are deformed. The thin wall in children makes percussion less difficult and more accurate. In recent years, much stress has been laid on cardiac enlargement in arriving at a diagnosis and prognosis of heart disease. In the second edition of Morse's case histories in Pediatrics,[5] the following normal transverse diameters of relative cardiac dulness are given: in infancy from 7 to 8 cm.; at six years 9½ cm.; at twelve years 11 cm. St. Lawrence[9] says that quite commonly valvular lesions occur without clinical evidence of muscular involvement. This idea was substantiated in this study.

Seventeen of the cases, or 48% of this series, showed definite enlargement, affecting mainly the left heart. The largest heart had a transverse diameter of 18 cm. in the fourth intercostal space. This was associated with double mitral lesions and aortic insufficiency. The average enlargement was 3.5 cm. This was based on the normal transverse diameter at their age, disregarding the fact that a large percentage of these patients were underdeveloped and their size that of a child one or two years younger.

Valvular involvement: Endocarditis in children nearly always affects the mitral valve. All of these cases showed mitral involvement; the aortic valve was affected less frequently and in each case, accompanied by a mitral lesion. Three of these cases had aortic involvement, associated with mitral disease. Any one, or all of the valves may be involved, but in this series there was no instance in which the pulmonic valve showed signs of disease. Only the mitral and aortic were affected.

Dunn,[6] in a series of 262 cases of chronic valvular disease of the heart, found the aortic valve alone involved in one instance and twelve cases in which both the aortic and mitral valves were involved, and no case with tricuspid involvement. Wentworth,[7] in a series of 600 heart cases, found fifteen with aortic involvement, two of which were not associated with any other lesions, and one instance of tricuspid involvement. In 150 necropsies on children, dead with cardiac disease, Poynton[8] found the mitral valve involved in 140 instances and the aortic in fifty-one instances.

Treatment: The treatment of the cardiac case is a serious medical problem. As has been well recognized, heart disease in children is almost always the result of acute rheumatism, or the rheumatic manifestations. These infections have a great tendency to recur. The first attack does not always involve the heart. Frequently only the endocardium is affected, without clinical evidence of myocarditis. It is quite possible that the lesion itself is not progressive, but advances only through continued or oft repeated operation of the etiological factors. Since the specific cause of the underlying condition is obscure, little help toward prevention can be expected from bacteriological or serological therapy.

The prevention of further damage to the heart, then, must depend on the eradication of foci of infection and the application of general measures to increase resistance by improvement in the general health.

Upon their admission to the dispensary, a careful search was made for foci of infection and means adopted for their eradication. This point of attack is never forgotten, and tonsils, adenoids, sinuses and teeth are repeatedly examined with the utmost care. An arrangement has been made with the dental clinic connected with the hospital to furnish the treatment of the teeth. A similar arrangement has been made with the nose and throat department for the removal of tonsils and adenoids. It has been shown by St. Lawrence[9] that a careful and complete removal of tonsils and adenoids does lessen recurrences of rheumatic manifestations, particularly the prompt and permanent disappearance of bone and joint pains.

All cases showing fever are either admitted to the ward, or instructed to remain in bed until the fever has subsided. Their diet is carefully regulated. An interest in this phase is aroused by weighing the patients each time and encouraging them to show a gain in weight. General hygiene is given due emphasis. Medication to combat anemia and to stimulate an appetite is given. The country home has been utilized during the summer months. The change of environment with fresh air and good food has done wonders with some. It creates the impression that their stay in the country, especially during the summer months, should be prolonged.

The general trend of the whole management makes for a better body and better living and can scarcely help being followed by improvement in nutrition and general health. Some observers have felt that the cardiac condition was improved by betterment in the general condition. St. Lawrence[9] believes that while both may be influenced by the same underlying conditions, they bear no direct relation to each other. When the state of nutrition is subnormal, some error in diet or hygiene, or some physical defect may almost always be demonstrated as the cause. The eradication of such error or defect is invariably followed by improvement under conditions of normal hygiene and diet. It has been found unnecessary to provide any elaborate measures in this direction.

The exercise tolerance of these cases was carefully studied in order to learn the ability of the heart to meet its needs, or its capacity for work and then to increase this capacity for work by exercise. At first the cases were handled with caution, and were not urged to follow the usual games and sports, except in the very mild lesions, but when the parents reported that they could not keep their children quiet, and that they insisted on running and playing, and no apparent bad effects were shown to the examiner, it was found that greater liberty could be given to the patient. Only in the most serious cases, requiring digitalis constantly, were they urged to pursue abnormal lives. In the serious cases, the management is rather regulation of the mode of life, than its restriction. They were instructed, as far as possible, to understand the meaning of shortness of breath, palpitation and throbbing, and were urged to stop exercise when these signs appeared, and if possible to stop before they did appear.

Cases of school age and mild cardiac involvement were urged to attend regularly. They were cautioned about climbing stairs and have been instructed to wait a few minutes after each flight. The exercises given in school are either allowed or disapproved, according to the individual case. A certain number of absences from school have been unavoidable in order that they could be observed at the clinic.

I am indebted to Professor E. E. Graham and other members of the staff for free use of the records and cases, and to the social service department for their coöperation.

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DISCUSSION

Dr. Edwin E. Graham (Philadelphia): Dr. Tyson's paper is, in my opinion, not only interesting, but timely. The proper management of these heart cases is most important and, as stated in his paper, often most difficult.

Eleven of Dr. Tyson's cases were 5 years of age or less. The younger the child the more likely is the condition to be due to a congenital heart disease and while the symptoms and physical signs of congenital heart disease usually render a diagnosis easy, there are a certain number of these cases where the symptoms are almost or entirely absent and the condition only recognized by a careful physical examination and a detection of the heart murmur. In a child of three years of age or less, the probability of congenital heart disease is great.

I wish to emphasize the point that Dr. Tyson made in his paper about sore throat being rarely complained of in the child. One should never take it for granted that the child's throat is not sore, simply because the child does not complain of it. Inspection of the throat is the only proper method of deciding as to the condition present.

The cases with advanced cardiac disease that gave a history of only mild rheumatic attacks, are of interest. Sometimes this is due to the fact that the mild cases are not put to bed promptly. Sometimes the intensity of the rheumatic poison seems to attack the endocardium more than other portions of the body.

The importance of a careful physical examination of a child is shown by the fact that eleven of the children had not complained of any symptoms referable to the heart, coming for treatment usually for the disease (tonsillitis, chorea or rheumatism) which had produced the endocarditis. The tendency for rheumatism, tonsillitis or chorea to recur, once the child has suffered from either of these conditions, has always been an interesting fact to me. It is certainly true clinically that a child who has had one of these diseases is most likely to have a recurrence. The endocardial lesion may or may not be progressive, depending very largely upon the character and severity of the lesion and the treatment that is instituted.

In the treatment of acute endocarditis, I am a firm believer in rest. In my opinion, the child should be kept in bed until the cardiac over-activity has largely disappeared, until the pulse has quieted down considerably and the child is able to sit up in bed and move around the room quietly without unduly increasing the pulse rate. I believe also in a strict anti-rheumatic régime at the stage of the treatment, including diet, clothing and exposure to wet or damp; and not only in rheumatic cases, but in all my chorea and tonsillitis cases, I believe in giving alkalies and anti-rheumatic drugs.

Of course, as Dr. Tyson clearly points out, all foci of infection, tonsils, adenoids, sinuses and teeth, should be carefully investigated. All cases with fever should remain in bed, not only until the fever has subsided but for a considerable period of time after the fever has subsided. The country home that Dr. Tyson speaks of in his paper is a great help during convalescence. If it could be kept open the entire year, it would be of advantage.

The exercise tolerance of these cases is important. They should always exercise short of fatigue; the amount of exercise allowed should be slowly increased and as far as possible shortness of breath and palpitation should not be produced by the exercise.

The functional murmurs in children are so common that at least a word should be said in regard to them. They are practically all systolic, usually soft, blowing and short, generally heard at the base of the heart, rarely in the mitral area. They vary more in time than organic murmurs, being present at one time and absent at another. In the etiology of organic heart disease in children, the infectious diseases play a part, especially scarlet fever, influenza, pneumonia and pyemic conditions.

To my mind the prognosis is always grave. Endocarditis is very dangerous to infants. The danger in older children is often more in the future than in the present. The earlier in life the child has the first attack of rheumatism, tonsillitis or chorea, the earlier of course is the second attack likely to occur.

I think it is important that all these children should have a reasonable amount of sleep. To confine a child to bed that does not feel sick, usually means that it will become extremely irritable and restless. I never hesitate to give these children a certain amount of sedatives, enough to secure a fair amount of sleep each night. Bromide or trional often act well.

One word in regard to placing an ice bag over the precordium in children: it does very well in older children, but should never be used in infants.

THE NONOPERATIVE TREATMENT OF PELVIC INFLAMMATORY DISEASE*

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The purpose of this brief paper is to investigate the necessity for operation in chronic pelvic inflammatory disease. In the beginning, we desire to state that the subject of *acute* pelvic inflammation is not considered from any standpoint, but our work has been confined to the chronic type of patient who is ambulatory and presents herself to the hospital dispensary for treatment. While we had some preconceived ideas on this subject, we have not let them interfere with our views as expressed in this paper; in fact, it was not until we had our statistical data in hand and carefully analyzed that we presumed to present our views. Our material has been drawn from our service in the Gynecological Dispensary of the Hospital of the University of Pennsylvania and represents the data obtained from one hundred and twenty patients treated between the years 1917 and 1921. These cases were selected only on the basis of complete notes and definite end results and without regard as to whether they were improved or unimproved.

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

A brief survey of the literature is sufficient to show that most authors state that good results can be obtained from the nonoperative treatment of pelvic inflammations, but we have been unable to find any definite statement as to what a follow-up system would show in chronic pelvic inflammatory disease treated without operation. In contradistinction to the above mentioned views of gynecologic authors, it is common knowledge that most cases of the type under discussion who consult the gynecologist or surgeon are advised to have an immediate operation, without regard to the possibility of nonoperative treatment. Is this course justifiable? We shall attempt to answer this in an unbiased manner.

Our analysis shows that, of the 120 cases in the series, 91 had grossly palpable pathology, while 29 had no palpable masses but were classified as inflammatory cases on account of pain, tenderness and induration in one or both broad ligaments. Let it be noted that the word *"cure"* is not used in this report as we do not know when these patients may have a recurrence of their former symptoms, and furthermore we are not deluding ourselves into the belief that our local treatment can cause the disappearance of pyosalpinges and other inflammatory remains. We merely desire to know what chance of prolonged relief these patients may look for from our treatment. If we can offer them nothing, the logical treatment is operation in every case. If, however, on the other hand, we can give a fair assurance of relief by nonoperative measures we believe that the patient should be entitled to select such treatment if she so desires. Those surgeons who are so radical as to operate on all cases of pelvic inflammatory disease as soon as the diagnosis is made will probably have little time for such views as are here presented, but they should be reminded that not a few of the operative patients are unrelieved by one or even multiple operations and many a woman has been made a hopeless nervous wreck as a result of ovarian ablation which is so often necessary once the abdomen is opened. The patient who improves under nonoperative treatment seldom has any increase in vasomotor ablation symptoms and furthermore, if endocrine therapy be instituted she responds much more readily than her unsexed sister.

Undoubtedly some of our cases might be called *cures,* were it not that we desire to err on the side of conservatism in our statements. Our analysis shows that of the 91 patients with gross pathology 19 were much improved, while in 49 others we claim only moderate improvement, a total of 68 (or 74.6 per cent) showing improvement. The remaining 23 patients (25.4 per cent) were unimproved, and 5 of these were referred for operation. Of the 29 patients without gross pathology 8 were much improved, 12 moderately improved, a total of 20 (or 68.9 per cent) showing improvement; while in the remaining 9 patients (31.1 per cent) there was no improvement. The duration of treatment in these cases is of interest especially from an economic aspect. In our series 11 cases required treatment less than one month, 45 were treated between one and two months, 32 between two and three months, 10 between three and four months, 5 between four and five months, 7 between five and six months, and 10 cases were treated one year. In brief, 98 cases (81.6 per cent) were treated less than four months and were either improved sufficiently to discontinue treatment or were advised to seek operative relief. The ages of our patients were:

Under 20	9
20 to 25	38
25 to 30	25
30 to 40	35
Over 40	13

This analysis is of little value except to again emphasize that the great majority of these cases occur between the ages of 20 and 40 years, when an unsexing operation should not be considered too lightly. We have been unable to determine much concerning subsequent pregnancies because of the difficulty in following dispensary cases after they have discontinued treatment. We know of one case which was confined by one of our staff, but further than this we can present no figures.

The treatment given to our patients is of the usual type, consisting of hot douches at home, local treatment of cervical infections, applications of antiphlogistic solutions, and in some cases the administration of organic glandular preparations.

This review of our small series has taught us to be open-minded in discussing treatment with patients. If the patient wants an operation we let her have it, but if, on the other hand, she asks whether there is no other relief, we feel justified in telling her that about three out of four cases can be relieved by nonoperative treatment, although there may be a recurrence of symptoms at any time. We believe that a patient who has been incapacitated for many months or years can afford to try local treatments for three or four months before submitting to operation, with its accompanying hazard. We believe this as the result of our experience and our experience continues to substantiate this belief.

DISCUSSION

Dr. George Erety Shoemaker (Philadelphia): This note of conservatism is a valuable one. It must, however, be wisely handled and we must find the truth. It depends upon what we are talking about. It is no kindness to leave real gross pathology in the body that is likely to result in a succeeding attack. A succession of these more or less invalids the patient. Those patients who have an opportunity to choose their surroundings may well afford to take more time. In my experience we see comparatively rarely in the well-to-do and those who are careful of their living the very gross inflammatory pelvic lesions which we see among the poor and those who have led the life of the prostitute or have been otherwise among the more or less uncared for or indifferent. My own effort in the management of the cases is to put them in bed and let the acute inflammatory symptoms subside before doing any operation. This in itself serves to determine whether operation is necessary or not and greatly lowers the death risk. Another point is to leave in every case, if it is possible, healthy or potentially healthy ovarian tissue. Even if tubes cannot be saved, I have been following that plan for a long time and shall continue to do so. It is of course true that certain damaged ovaries will undergo cystic degeneration and occasionally a second operation will be required, but most patients are happier and come nearer living the normal human life if they have conservatism carried out in that way.

To-day I have examined two patients, one of whom has a four plus Wassermann of active syphilis, with a very large inflammatory mass, much soreness, a temperature of 101 and a high leucocyte count. In that case I shall not only allow the acute symptoms to subside, but she will meanwhile get, under proper supervision, antisyphilitic treatment. That may in itself make a difference in our attitude as to the necessity for operation. The other patient with a temperature has destructive lesions of definitely gonococcal origin.

I have patiently tried nonoperative, so-called conservative measures in dispensary practice in my earlier years and was often disappointed in what I could accomplish. In many instances I did not feel that it paid the individual for the amount of time and suffering which she has to undergo without real conservative operation, especially in severe gonococcal disease. The postpuerperal mass infections do better with no operation at all or else vaginal drainage of pus collections.

Dr. Charles P. Noble (Philadelphia): It seems to me that this subject is one wherein sound conclusions cannot be drawn, except from an experience extending over a long period of time. Like Dr. Shoemaker, my own experience began so many years ago that in earlier years I had a large opportunity to test the results that can be obtained by local and nonoperative measures. Speaking by and large, it is my judgment that it is only in the puerperal infections that nonoperative treatment, in any large percentage of cases, obtains cures. That is because in puerperal cases, unless an abscess is formed, the tendency is to spontaneous recovery, because the condition is primarily a lymphangitis, or a phlebitis with associated cellulitis, instead of a salpingitis as in gonorrheal pelvic inflammatory disease. There is no doubt that regulated rest, together with local treatment favors resolution and recovery. Therefore, in the puerperal cases I feel that operation should be delayed or should not be done in the presence of suppuration. On the other hand, any one who has had large experience in dealing with gonococcal infections involving the tubes knows that it is purely an incidental occurrence when the acute condition ends in permanent recovery. It cannot be foreseen whether or not a patient shall have recurrences.

Along the line of Dr. Shoemaker's discussion, I can heartily endorse the value of rest in bed, hot douches, and other local treatment, in subacute conditions of gonorrheal origin as favoring the absorption of extratubal exudations, before resorting to operation. By so doing the operation is very much simpler and the permanent results are much better, because much less raw surface is left to be covered by peritoneum, and postoperative adhesions are minimized.

Dr. Block (in closing): I want to repeat we are not considering the acute inflammations, but the chronic. In regard to the chronic we are not recommending patients not to have operations. We tried to make that clear. We believe in operating as much as the next man if patients want operation. We looked up the figures to give some idea of what the two chances are. We wanted to give our patients an intelligent answer.

THE TREATMENT OF CONCOMITANT SQUINT WITH ESPECIAL REFERENCE TO TRAINING OF THE FUSION SENSE*

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Before it is possible to outline a course of treatment for any condition it is advisable to know three things: the diagnosis of the condition, the cause of the condition, and the usual course of the condition. So in outlining the treatment of concomitant squint it is first necessary to assure ourselves that the case is one of concomitant squint and not a paralytic condition, to know what the underlying causes of concomitant squint are, and to know what the usual course of a case of concomitant squint is.

In the ordinary case it is not difficult to be sure whether there is any paralytic element in the case of squint with which we are dealing. The full rotations of each eye in all directions, and the lack of difference between the primary and secondary deviations are usually enough to make fairly certain that no ocular palsy exists; but at times where a case has persisted for some time the lack of rotation of unused muscles, for instance, external recti in a convergent case, will make it rather difficult to be positive that there is not at least a paresis of one or more muscles. In considering the causes of concomitant squint it is, of course, well known that three things have been suggested as of greater or less importance in the causation of this condition: first, faulty attachment of extra-ocular muscles; second, Donders' theory of refraction; third, Worth's theory of the lack of the sense of fusion. The muscle theory has been so completely discredited by the studies of Worth and others that more than a passing reference to it is hardly justified. It may be a factor in a small percentage of cases but is usually negligible. Donders' idea that over-accommodative effort to overcome hyperopia, producing an over-convergence and the final fixed condition, is one which throws a great deal of light on the subject and has undoubtedly much to do with the production of a convergent squint in many cases, even though the absence of the fusion sense may be absolutely necessary for squint to develop. Especially is hyperopia apt to produce a convergent deviation of the visual axes when the amount is unequal in the two eyes, and yet we frequently see cases where there has always existed a distinct difference in the amount of hyperopia in the two eyes where no squint has supervened; for example, the case of:

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 4, 1921.

H. J. Y., a boy eight years of age when first seen in January, 1921. Advice was sought because in the school examination it was found that the vision of the left eye was distinctly subnormal, no other signs or symptoms of ocular trouble being present. Examination showed no external change. Central vision of O. D. was 5/5, O. S. 3/60. The muscle balance was orthophoria at 5 meters and with the amblyoscope there was good fusion with the tubes parallel. Under atropin the refraction of the right eye was plus 2. S., and that of the left eye a plus 5. S. with a plus 1.50 cylinder axis 60, which improved the vision from 3/60 to 5/30. This was ordered less plus 1.50 S., and while at eight years of age to improve the vision of an amblyopic eye is almost hopeless, a blinder was ordered to be worn over the right eye at least four hours a day. In two months the corrected vision of the left eye has improved to 5/15, and when last seen on the 13th of July was 5/9.

Here is a case of a boy who for eight years made little use of his left eye. There was a tremendous difference in the refraction of the two eyes and yet he had developed a perfectly normal fusion sense and there was no squint—a strong piece of evidence, to the writer's way of thinking, that much more than an uncorrected hyperopia is necessary to produce a concomitant squint, this "much more" being absence of the fusion sense, and that in all probability Mr. Worth is correct when he makes the statement that with a good fusion sense there may be a heterophoria develop but there is unlikely to be a constant deviation.

The usual course of a case of concomitant squint which is not treated, say until the eighth year, is as follows: The deviation is noticed between the second and third year of life. It may, of course, appear much earlier than this or may be delayed, but this is about the average. It usually appears after there has been transient convergence over a period of time, or it may appear very suddenly after there has been some sudden jar to the nervous system and developing fusion sense, such as a fall, convulsive seizure or some illness. It may become an alternating squint, the eyes being used interchangeably and the vision of each kept useful as a result, but with no development of binocular vision; or it may become monocular with one eye constantly converged, as a result constantly unused, and the vision thereby gradually sinking until it is more or less amblyopic. The difference between an alternating and a unilateral squint is the fact that in the former there is much less likelihood of loss of vision in one eye than there is where one eye is constantly converged and disused. When an alternating case reaches its eighth year, having had no treatment, there are very likely to be two major difficulties present, the ocular deviation, and the loss of binocular vision and all that goes with it. When a unilateral squint reaches this time of life having had no treatment, there are likely to be three disabilities, the deviation and the lack of binocular vision as in an alternating case, and with this the degradation of vision in the converging eye.

The treatment of concomitant squint may be divided into surgical, and nonsurgical or training. Surgical intervention does but one thing, and that is correct more or less accurately the deviation; it does not produce a return of vision to the amblyopic eye, nor does it do anything to restore binocular vision, fusion sense and finally stereoscopic vision. Training, including the correction of the error of refraction by glasses, if the case is seen early enough and the treatment properly carried out, will develop the vision of an amblyopic eye often to normal or approximately so, will develop a fusion sense, and ofttimes produces a disappearance of the deviation without operative interference. The training consists first, of the correction of the error of refraction after a cycloplegic has been used, as soon as the child is old enough to wear glasses; second, rendering the use of the preferred eye, in a unilateral case, impossible for a certain part of each day by occlusion of this eye with a bandage, or lessening the use of this eye by atropin instilled at suitable intervals; third, training of the sense of fusion with some form of instrument similar to Worth's amblyoscope. If the child is seen before the age when glasses may be comfortably worn, blinder exercises may be carried out, where the squint is unilateral, until the time when glasses may be properly prescribed.

The greatest obstacle to the satisfactory orthoptic treatment of squint is the age at which we are apt to see children so affected. The writer's own experience, and he has paid much attention to these cases over a period of nineteen years, is that Mr. Worth is correct when he places six years as an upper boundary for the satisfactory development of the amblyopic eye and of the sense of fusion. It can be done later than this, as was proved by the development of vision in the amblyopic eye of the case just cited, but that is an unusual experience. If the squint does not develop until the fifth or sixth year one is pretty sure to find at least a partial development of the sense of fusion which, with a correction of the error of refraction, will be enough to bring about a restoration of the visual axes to parallelism, but it may be taken as an axiom that the earlier the development of the squint the earlier the treatment is required.

The writer feels that no child is too young to be under observation, and if a study of central vision by fixation of a light and by Worth's ivory ball test shows that it is predominant in one eye over the other, no child is too young to be under treatment by the covering of the preferred eye, in this way bringing up the vision of the amblyopic eye, so that by the time the child is old enough for glasses and fusion training, equal vision or approximately equal vision will be found in each eye and much time will have been saved. In regard to any definite age at which glasses may be prescribed the writer has no conclusion. He has seen children where at six months of age they were of distinct benefit and were worn with signs of comfort. His routine, however, is not to have them worn until the child is eighteen months to two years of age, feeling that under ordinary circumstances this is early enough to lessen the refraction strain, as before this but little can be done in the way of fusion exercises.

There is one condition for which he thinks glasses are indicated as soon as possible, and that is a transient squint where there is a distinct hyperopia. A child in this condition ordinarily has a certain amount of fusion sense which is trying to keep the visual axes parallel but the strain of accommodation is too great for it, especially when the child is fatigued, and the squint will appear, lasting possibly but a few hours, but which when uncorrected is almost sure to end in a permanent deviation. This permanency may be avoided and the whole thing readily overcome if the strain of accommodation and overconvergence is removed; for, with the relaxation produced by the correction, the partially developed fusion sense is enabled to become a dominant factor and to take control of the situation. One thing must be understood before the necessity of early study and treatment of these cases can be thoroughly grasped, and that is that as far as the ultimate result of a physiologically developed pair of eyes is concerned, a small deviation of the visual axes, say of 5 or 10 degrees, is as great a deterrent as one of 40 degrees, that as long as there is any deviation at all the eyes will not be used simultaneously, for were they to be so used diplopia would ensue. As a result of this lack of binocular simultaneous vision, one eye is almost sure to become amblyopic and there will be no development of the fusion sense. Therefore, except for an accurate study of the case, but little attention may be paid to the amount of the deviation which, if it does not disappear with the correction of the hyperopia and the fusion training, can be overcome by operative procedures later.

Operation overcomes the deformity and may be done at any time of life but it does not develop the physiological binocular vision which is necessary to make the patient a normal human being. This can be developed only by the simultaneous use of the two eyes and ordinarily only before the sixth year. The deviation in some cases disappears with the correction of the refractive error. In these cases ordinarily a partial development of the fusion sense will be found on examination and they do not require great efforts to bring about a normal condition. In others the squint gradually lessens as the desire for fusion becomes stronger, so that an actual convergence may turn itself into an esophoria requiring a tenotomy only to bring about the disappearance of the deviation, as is shown in the following case:

W. G., aged 6 years, seen first in September, 1920, with the following history: Eyes had first been noticed to converge when 2 years, after a convulsive seizure; when 4 years of age, eyes were first treated but in a very indifferent fashion. On examination, O. D. V. cc. 5/6, O. S. V. cc. 5/35. The correction of the right eye was a plus 0.75 cyl. axis 90; left eye, plus 1.00 cyl. axis 90. The child fixed well with either eye but preferred O. D., the convergence measured on the perimeter was 30 deg. Under atropin O. D. plus 1.50 S. with plus 1.50 cyl. axis 105; O. S. plus 1.75 S. plus 0.75 cyl. axis 75. This was prescribed less plus 0.50 S. for constant wear, O. D. V. being 5/5, O. S. V. 5/15. There was some fusion with the amblyoscope but very poorly maintained. A pad was ordered over the right eye to be worn three to four hours a day and under this the vision has improved until now it is 5/5 in each eye. He now fuses well with the amblyoscope with about 10 degrees range of fusion, the visual axes remain parallel most of the time, fatigue being one of the things which will produce the squint. With the Maddox Rod he has orthophoria in the vertical meridian, 15 degrees of esophoria both at infinity and at 33 centimeters. Tenotomy of the left internal rectus muscle will in all probability be sufficient to overcome the residual tendency to squint. It is to be expected that by the time he is 12 to 15 years of age he will be using his glasses only for near work.

This latter condition is frequently reached in such cases as is shown by the two following:

H. L. was seen in December, 1913, at the age of 5 years, with a convergence of 10 degs. on the perimeter, the left eye being the faulty eye, fixation being good with each eye but the right eye being the preferred. On the illiterate card O. D. V. 6/12, O. S. V. 6/30; under atropin O. D. with a plus 2.50 S. plus 0.50 cyl. axis 105 = 6/5, O. S. plus 1.75 S. plus 0.75 cyl. axis 90 = 5/25. This was prescribed less plus 0.50 S. for constant wear and the pad was worn over the right eye three hours a day. At the same time amblyoscopic exercises were started. In six months the corrected vision of the left eye was 6/8, a vision which is still maintained, there was good fusion and with the Maddox Rod there was 8 degrees of convergence. In six months more there was not only good fusion but there was 10 degrees amplitude of fusion and only 3 degrees of esophoria with the Maddox Rod. He was refracted last in August, 1921, the right eye taking, under atropin, plus 1.50 S. plus 0.50 cyl. axis 75 = 5/5 plus, left eye plus 0.50 S. plus 1.50 cyl. axis 100 = 5/8. Partly, muscle balance at 5 meters was 2 deg. of esophoria. He uses his correction now for near work only and is perfectly comfortable.

Another similar case is that of:

A. C., first seen in 1904 when 3 years of age, with a history that he had squinted for two years. Convergence at that time was 35 degrees, the squint being an alternating one, fixation being good with either eye and no preference. Under atropin the refraction was found to be plus 3.75 S. plus 0.75 cyl. in each eye. This was ordered less plus 1.50 S. for constant wear and amblyoscopic exercises were started. In one year he had good fusion, the convergence had lessened to 10 degrees at 6 meters. By April 1, 1905, there was no squint at 6 meters. In 1907, he had whooping cough, which lasted for three months. There was an esophoria of 2 degrees at infinity without the correction, with the correction it was practically orthophoria. He was last seen in November, 1913, and the refraction was plus 1.00 S. with a plus 0.25 cyl. in each eye. There was no convergence and he was using the glasses only for near work.

There are certain points in the treatment of these children which should be especially accentuated. The first is need of careful and accurate determination of the error of refraction. Cases have been seen where, instead of correcting the astigmatism carefully, a pair of plus spheres had been prescribed which were so far from the proper correction that the child's vision was quite blurred and as a result the difficulty in using the eyes increased rather than diminished.

Next to the accurate correction of the error of refraction in importance come the measures to be taken for the development of the vision in an amblyopic eye, namely, a patch or atropin instillations used to blur the vision of the good eye. Under no circumstances should atropin be used for a long time in both eyes to lessen the accommodation and convergence, for should there be an amblyopic eye its sensitivity will not be increased by this method though the deviation may disappear while the atropin is used. Too much stress cannot be laid on the fact that while the deviation is the most apparent of the disabilities which the child suffers it is in a way least important, and if other things are brought to normal it many times disappears without further intervention.

It is in the cases seen soon after the deviation appears that orthoptic treatment gives the best results. This should be expected because here the eyes have not been used improperly for a long period of time and therefore they are much more amenable to corrective methods. It seems probable, if all cases were actively treated within a few weeks after the development of the squint, that the majority of operative procedures would become unnecessary.

DISCUSSION

Dr. Edward A. Weisser (Pittsburgh): We all appreciate the value of Doctor Langdon's paper on the treatment of convergent strabismus, as he has covered the ground so thoroughly. To sum up the treatment in as few words as possible, five important periods present themselves:

First, the institution of treatment as soon as the squint presents itself by covering the fixing eye for some period of time each day.

Second, by correcting any refractive error by glasses, as soon as a retinoscopy can be done, this to be followed by the occlusion of the fixing eye as before.

Third, by the instillation of atropin in the fixing eye until it converges, following this by covering the fixing eye after it becomes straight again, for an hour or two daily.

Fourth, by the training of the fusion sense with amblyoscope or stereoscope.

Fifth, operation at a suitable time, certainly not before the tenth year, and then under local anesthetic in order that we may be able to know definitely just how much advancement is to be made.

Dr. William Zentmayer (Philadelphia): Very often this method of treatment is neglected because of the time required and the patience necessary in carrying it out. This, however, is no excuse for not giving our little patients the best treatment possible.

While I agree with the methods adopted by Worth and by Doctor Langdon, and they do give good results, I do not think it proves the theory upon which this treatment is based. I am quite convinced that the theory of Donder explains squint quite satisfactorily.

There may be some cases in which a weak fusion is necessary to explain the case, but this I think is limited to the cases of alternating strabismus. I should consider that at least 95 per cent of patients with convergent squint were hyperopic, and that the degree of hyperopia is considerably more in the eyes of patients that squint than in the average refraction case. Further, squint often develops in children when there is a lessening of accommodation through illness after the age at which the so-called fusion faculty should have been developed. The same reasoning which explains the development of convergent strabismus from hyperopia explains the development of divergent squint from myopia. The fact that the squint develops late in life indicates that the increasing myopia has disturbed the relation between convergence and accommodation.

Treatment with the amblyoscope is of course bound to bring about improvement of the squint, irrespective of the theory as to its causation. There are a great many factors in the Worth treatment: First, the accurate correction of the refraction error, which is sufficient in many cases to cure the squint. Second, the improvement of the amblyopic eye. Third, the increase of the amplitude of the convergence power, and also the very important factor of bringing about proper relation between accommodation and convergence. All these I think are more important than the development of the fusion faculty in the cure of squint.

In regard to the amblyopia, I believe it is far better, even though you cannot carry it out for so long a period, to cover the fixing eye rather than to use atropin. Frequently the child will not use the amblyopic eye, but still prefers to fix with the better eye, even though the sight is dimmed by the cycloplegic. So you sometimes fail to accomplish your purpose in this. I believe it is preferable to the use of a cycloplegic.

Prof. J. Van der Hoeve (Leiden, Holland): In his excellent paper Dr. Langdon seems to have no doubt whether amblyopia ex anopsia caused by squint exists or not. I agree fully with Dr. Langdon in the idea that squint causes amblyopia very frequently, but we cannot consider this view as universally adopted. We have advanced in this subject not much further than we were twenty-five years ago when Schweigger, Germach and others denied the existence of amblyopia ex strabisme.

In the last meeting of the French Ophthalmological Society, Delormes (Nimes) stated that he had excellent results in treatment of amblyopia in squint, but in the discussion we see that not all the French ophthalmologists agreed with the idea of the existence of an amblyopic strasbismus, and we find in the same month, in the *Clinique Ophthalmologique* an article of another Frenchman who denied the probability of ameliorating amblyopia in squinting eyes. We know that the results of Juval himself in educating the amblyopic eye were not very good.

This question is of great importance. In the first place, if an amblyopic strasbismus does not exist it is unnecessary to try to educate the amblyopic eye, and we must always be aware of the fact that the training of an amblyopic eye is very tedious and disagreeable for the patients and their family. In the second place, our convictions about the probability of the existence of an amblyopic strasbismus will have great influence on our treatment. Every ophthalmologist who does not believe that strasbismus causes amblyopia will like to wait for operation until the patient is beyond the age when we sometimes see a spontaneous recovery from squint—the age of about ten years. On the other hand, every ophthalmologist who believes in the existence of amblyopic strasbismus will operate as soon as he perceives that nonoperative treatment is not successful, whatever the age may be.

Therefore I think it is of much importance that we try to be absolutely certain whether amblyopia ex anopsia exists or not, and what are the results of nonoperative treatment.

Dr. B. Alexander Randall (Philadelphia): Accepting the theory of amblyopia ex anopsia, I should like to refer to two cases which have interested me very much in the past, in one of which there was a convergent squint with a moderate degree of hyperopia of long standing, and in which there was positively developing a secondary center of clear vision, as in the bird, in the converging eye. This was a source of great annoyance to the patient after correction, and it was quite a while before the amblyopia of the true center of that eye was sufficiently relieved and the extra center was dimmed again by disuse so that she was free from the resulting diplopia.

The other case was that of a child, with five or six diopters, who came in in great glee when she got her glasses, saying, "Now I can see!" She looked at the portrait of her father on the wall and said, "Why, that's my father!" This is a point that we do not appreciate—how extremely bad the vision is in absolute hyperopes. This child, with marked convergence, always the left eye converging and the right fixing, was treated by covering the right eye and by occasional atropin; and when she was five or six years old we gave her correcting glasses. She has ever since been able to see fully 6/6 with each eye, although squinting when looking over her glasses.

I also have a woman of some thirty years of age who still has her squint, despite treatment, when she looks over her glasses or takes them off. She has not learned her fusion to such a degree that her eye does not turn in promptly when correction is removed.

I think some of these factors are inadequately regarded by some men.

UNUSUAL CASE OF EXUDATIVE CALCIFYING FASCIITIS (?) WITH EXTENSIVE CALCAREOUS INTERMUSCULAR DEPOSITS*

HARRY LOWENBURG, A.M., M.D.

PHILADELPHIA

Being unable to formulate a definite diagnosis by reason of never having encountered a similar case, the title, "Exudative Calcifying Fasciitis with Extensive Calcareous Deposits" (largely and primarily intermuscular) is preëmpted solely for the reason that it is descriptive of the pathologic condition encountered and not because it represents a definitely known disease entity—at least it is one not known to me. As will be developed in the history, this patient has been under my personal observation for over two years. The history further reveals that the onset of the condition probably antedates this by at least three years. Further, while comparatively recent observation of his tissues at the operating table shows that certain changes and deposits have taken place within the muscle substance itself, yet these are undoubtedly secondary inasmuch as the deposits first noted over two years ago were distinctly placed along the fascial planes and aponeuroses and along the sheathes and subdivisions of the sheathes of the muscles and not within the muscle substance. Even now the involvement of the muscle itself, as will be revealed. is more apparent than real, the deposits simply following the terminal division of the fibrous or serous framework holding the muscle fibres together. The changes within the latter do not exhibit calcification but are more of a degenerative and necrotic type and are of but comparatively recent occurrence and appear to be due to pressure or to interference with the circulation of the muscle fibre. In other words, as the process developed the muscle framework also became calcified but not the muscle itself. For this reason the term "intramuscular" was not included with the term "intermuscular" as necessary to a complete description of the pathologic process. For this reason, too, and also because osseous elements were absent in the material examined, the condition, though probably akin to, was differentiated from myositis ossificans.

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

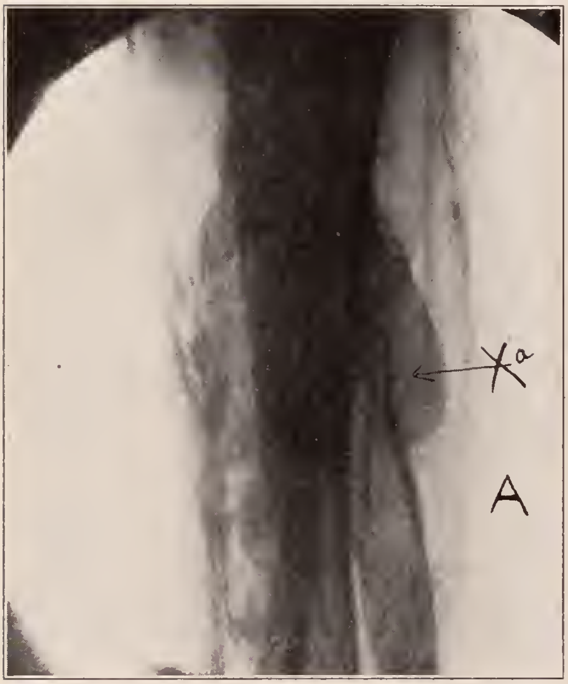

Fig. 1.—View of the right thigh, showing intense intermuscular calcification. Before incision, showing the sack-like shadow (a), referred to in the text. This contained a pus-like substance.

M. S., male, age 7 years (now 9½ years), was brought to me during April, 1919. He walked into the office with a slight limp. He complained of some pain in right thigh. For the past three and a half years he had been receiving medical and electrical treatment for rheumatism.

Family History: Parents well; not related; no miscarriages. One younger brother living and well. No children dead.

Previous Medical History presents nothing unusual.

Chief Complaint: Pain and tenderness of right leg and thigh. Some interference with locomotion. Temperature varied between 99° F. and 101° F. Following incision and the use of autogenous vaccine it rose to 104° F., on a few occasions throughout the course of treatment. Pulse correspondingly increased. The circumference of the right thigh was greater than that of the left. There seemed to be deep-seated pain on pressure. Over an area about 5½ inches from the outer aspect of the greater trochanter of the femur (reference will again be made to this), on the antero-lateral aspect of the thigh, it was thought, not with certainty however, that deep-seated fluctuation could be detected. The whole thigh gave a feeling of

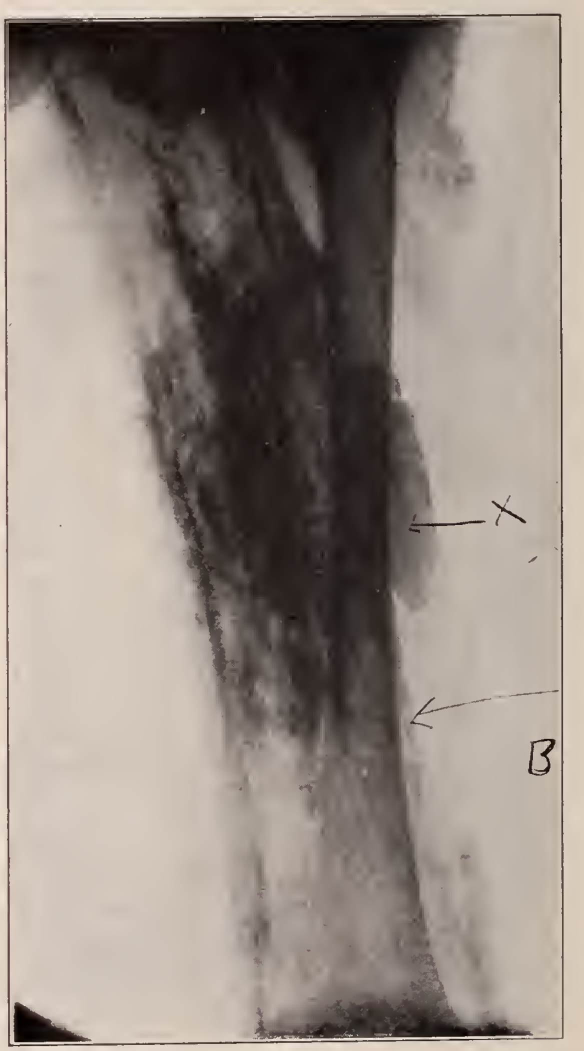

Fig. 2.—Same as Fig. 1, only after incision and curettage. Note contraction of sack-like shadow and the general diminution of the other shadow in the vicinity of this

board-like stiffness and on deep digital pressure hard nodular, almost sharp, areas could be detected. This same condition was noted on the left side as well. The joints and bones appeared normal. There were no palpable evidences of the condition in the upper extremities at first, although later data obtained by the x-ray revealed involvement here as well.

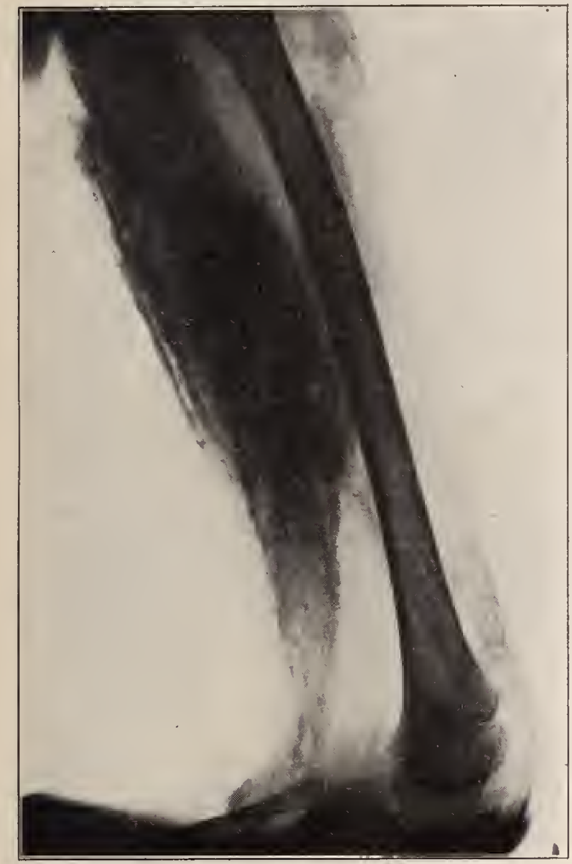

Fig. 3.—Shows extensive intermuscular calcification in thigh, lateral view.

Urine: Negative.

Blood: Hb. 70%; R. B. C. 4,220,000; W. B. C. 9,800. Polymorphneuclears 73%. Small lymphocytes 27%. Blood calcium 9.4 mg. to 100 cc. (normal 10). Blood phosphorus 4.11 mg. to 100 cc. (normal about 5).

Von Pirquet: Negative.

Section of biceps removed, examined and found negative for trichina.

Roentgen Report (Dr. Geo. Rosenbaum) follows: "There presents a very rare ossification of the musculature of both thighs. This extends upward over the hips. Osteomyelitis and arthritis absent. Skull shows no abnormalities, neither does the thorax or abdomen. Right shoulder shows calcareous deposits around scapula. These are also seen in the pelvis and around both innominate bones, almost as high as the crest of the ilia and around the right knee and the left knee and down the outer side of the left leg. The feet and hands are free."

The x-ray report, while revealing the presence and nature of the deposits, is not quite in keeping with the pathological findings, as it will be revealed that the deposits did not involve the "musculature," but existed *between* the muscles and as stated above were not osseous in nature.

While examining the roentgenogram of the right leg a peculiar pouch-like shadow was noticed (indicated by cross). See (a), Fig. A, and about corresponding to the area over which it was thought that deep fluctuation could be detected. This was accurately measured with a tape and its center was determined to be 5½ inches from the greater trochanter of the femur and 1½ inches from the outer aspect of the thigh. A needle attached to a Luer syringe was accurately inserted to correspond to these measurements. A syringe full of thick, creamy, homogenous pinkish substance, resembling pus, was obtained.

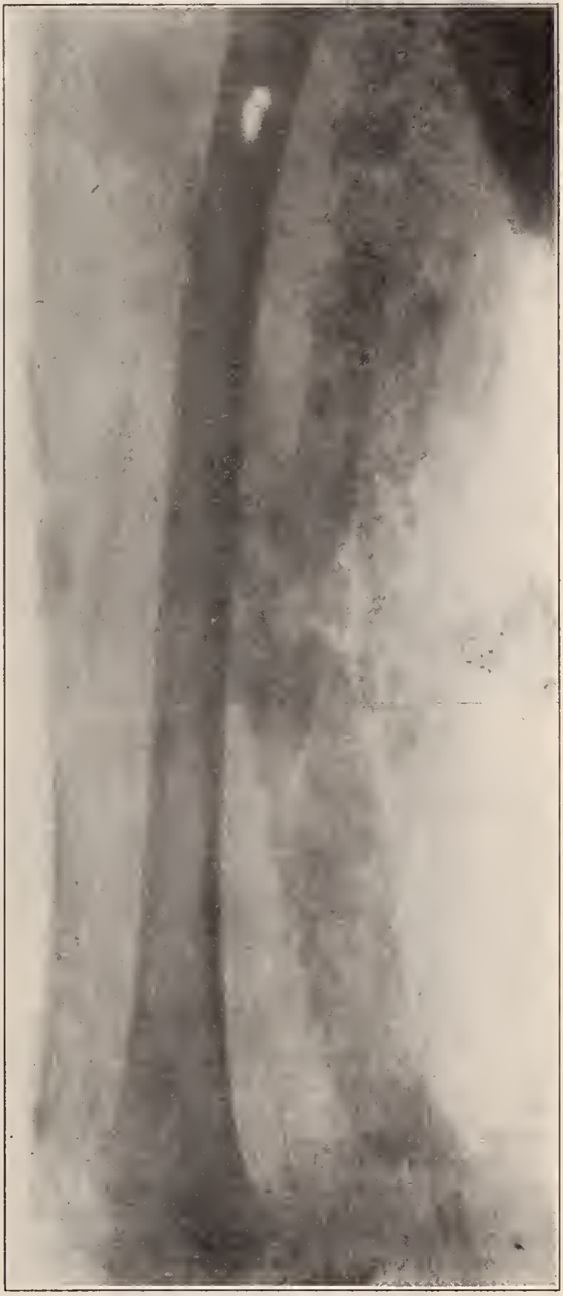

Fig. 4.—Thigh. Inner aspect shows deposits. Outer aspect practically clear after curettage.

Patient was etherized and about 5 ounces of this material was evacuated through the incision. Digital examination discovered gritty calcareous masses.

These were scraped off with a curette in almost endless quantities and from all directions until the glistening facia covering the muscles was reached and underneath this was seen healthy muscle. This material, some of which is here exhibited, was later shown to be calcium carbonate principally. It effervesced on the addition of hydrochloric acid. No bone elements were discovered. There seemed to be involvement only of the fascia covering the muscle and of the fibrous septa separating groups of muscles from each other, but the muscles themselves were not involved. The calcareous masses were *between* the muscles not *within* them. Hence, myositis ossificans was excluded, as previously stated, and the most appropriately descriptive term appeared to be the one employed, viz., exudative calcifying fasciitis. The muscles were of good healthy red color, and showed no abnormalities on section. The condition of the musculature has already been discussed and will be referred to again under "Comment" in detailing further operative procedures.

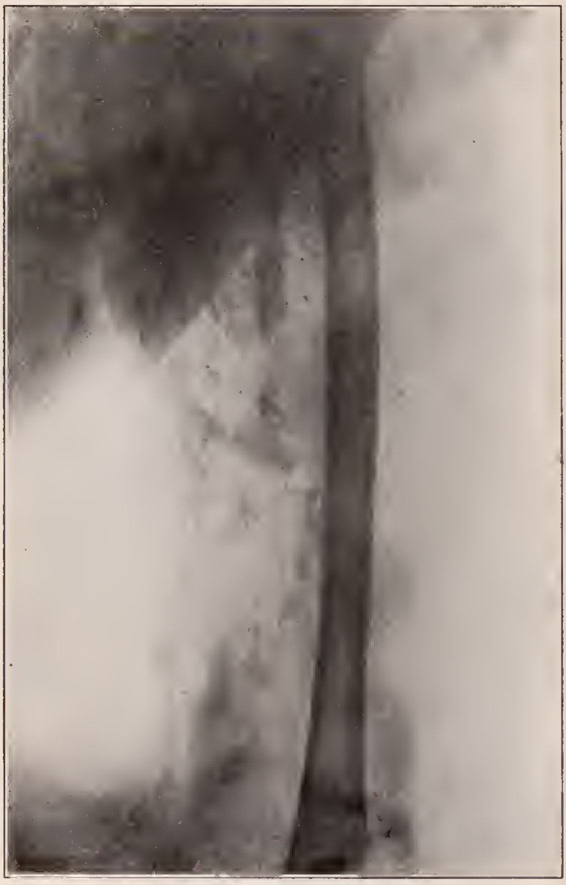

Fig. 5.—Thigh after curettage.

Examination of the fluid proved it to be free of all organisms, including the tubercle bacillus and the spirocheta pallida. It consisted of degenerated leucocytes and some erythrocytes. An injected guinea pig survived. At one time during treatment streptococci, and staphylococci were discovered but probably resulted from secondary infection. An autogenous vaccine was prepared but indifferently employed. The wound was irrigated daily with Dakin's solution and packed with iodoform gauze. Healing occurred with amazing rapidity.

The left thigh became active after the right had healed. This too was incised and curetted on three occasions, each time under ether. Large amounts of creamy pus-like material and calcareous masses were removed. These wounds also healed rapidly. A fluctuating area also presented over the right pectoral muscle and also over the head of the fibula of the left leg. These places were also incised and curetted and serous fluid, with but very little calcareous material, was evacuated (see Comment).

Throughout the course of the case idoin in some form—iodoform, syr. acid hydriodic, colloidal iodin, etc., were employed. The lad seemed now to be in good form. After this first operative procedure, which occurred in 1919, he gained weight. He had no cardiac involvement and apparently has none now. His legs became softer, especially the right, which appears to be practically free of calcareous deposits where these were removed, i. e., no new deposits recurred at the point where thorough curettage was done. In fact a curious feature of this case is that not any of the areas which were thoroughly curetted became involved again.

His temperature averages between 98 3/5° F. and 99 3/5° F. by mouth. If an acute exacerbation intervenes he has a rise in temperature to 101° F. or more. These acute attacks are characterized by pain and swelling over the part involved, with some suggestion of fluctuation. Puncture during this time reveals only serous fluid. The attacks usually subside within 3 or 4 days. Usually within a period of a few weeks following these acute attacks, new calcareous deposits may be detected by palpation and the x-ray.

Comment: What the cause of this condition may be I am unable to state. Evidence as to the nature of the pathologic process is, however, at hand. From a comparison between the slight lesion treated in the right pectoral muscle and over the head of the fibula of the left leg, with the extensive lesions found in the legs and upper extremities it would appear that the process starts as a "fasciitis" which is accompanied by a more or less clear serous exudate. It apparently being noninfectious, very little temperature occurs and aside from local tenderness perhaps, the

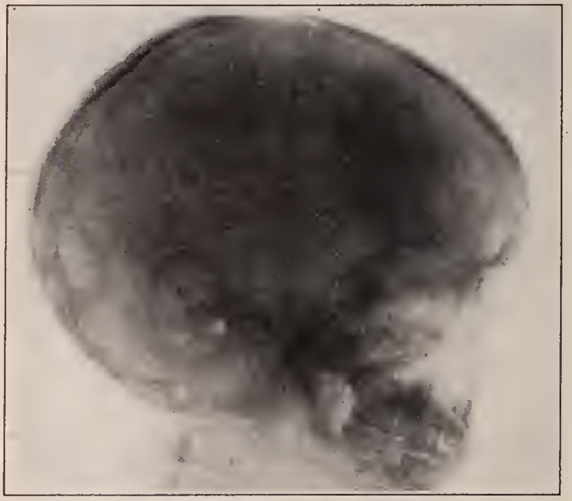

Fig. 6.—Skull. There are no deposits seen in this region.

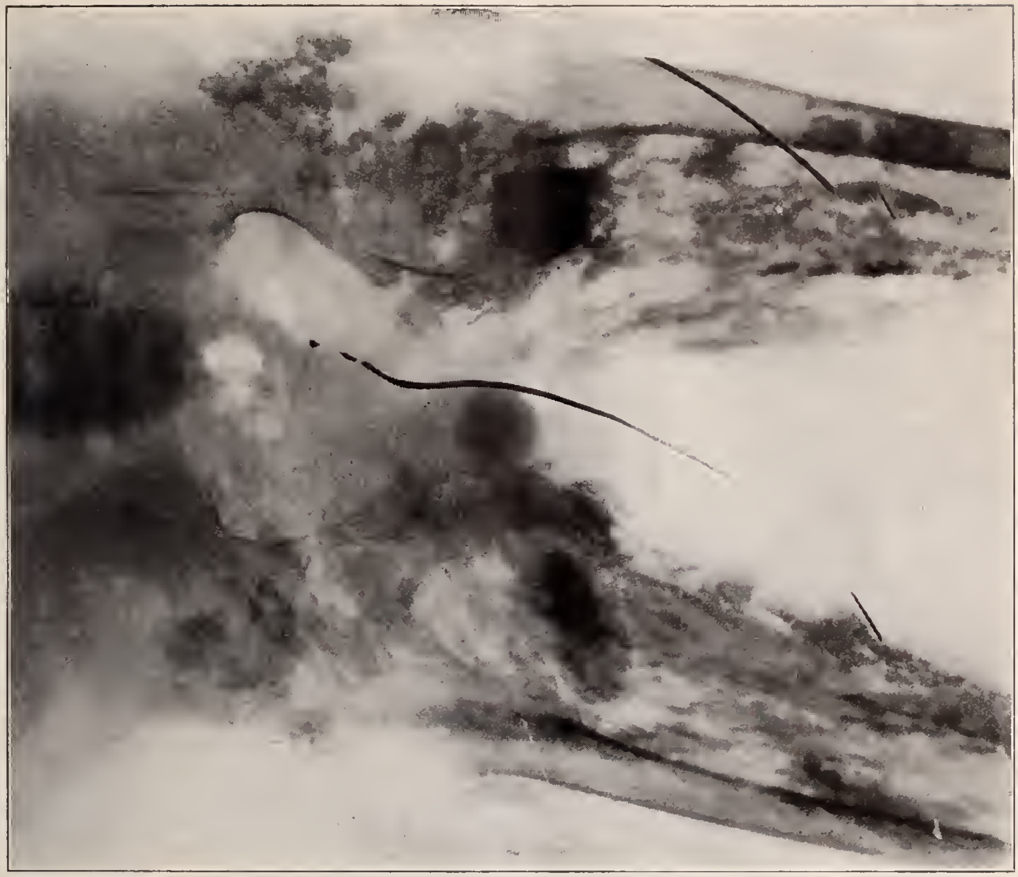

Fig. 7.—Extensive calcification of thighs and in region of the hips. Absent around lower spine and sacrum. It will be noted in all the pictures that the bones are normal.

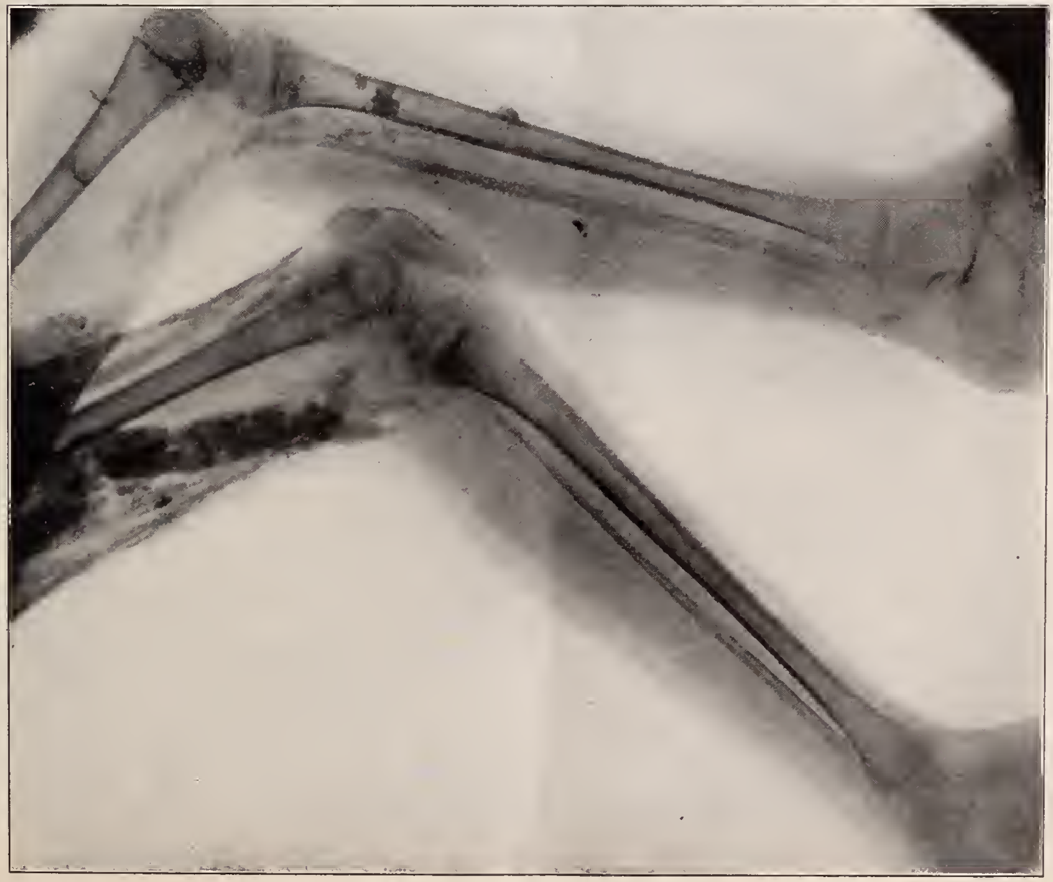

Fig. 8.—Extensive calcifications of thighs. Practical absence of this in the lower legs. Also absence in feet. Note comment above.

condition may be felt to pass practically unnoticed. The exudate is retained. Leucocytic infiltration ensues and it assumes the appearance of pus. Absorption is now slowly inaugurated. Condensation, saturation, super-saturation, and precipitation, with deposition of lime salts, follow each other in orderly sequence as common physicochemical phenomena.

As stated, this case has now been under observation some two years or more and as yet no clear explanation has been found in reference to its etiology, true nature and treatment. With a view to seeking light upon it I have asked for consultation advice from some of the most eminent pediatrists in the country. I first interviewed Koplik, taking the lad to New York. After a careful physical examination and study of the x-ray plates he could offer no suggestion except that in view of the non-recurrence of deposits where the original ones had been curetted away that wherever these appeared and were accessible, they should be removed by a competent surgeon. I then took him to Johns Hopkins Hospital, where he was examined by Howland, Barker and Halstead. His case aroused intense interest but no assistance could be given. For a while he received small doses of thyroid extract without any benefit. Acting on Koplik's advice and upon my own experience with him I then placed him under the care of Dr. Wayne Babcock, who on two occasions operated upon him. On the first Dr. Babcock removed large and small masses from the right pectoral, severing the latter near its insertion, and thoroughly cleansing the axilla and supra and infraclavicular spaces, and the upper arm. At the second operation he gave his attention to the thigh, but the process had extended so far into the sheaths of the muscles that he was able to accomplish but little after two hours' patient work. It was during these operative procedures by Dr. Babcock that the nature of the process and the infiltration of the septa supporting the muscle fibres, and the freedom of the fibres themselves, were studied at close range. While under Dr. Babcock's care he also received minute doses of tuberculin. This was used with the idea that the introduction of foreign protein might be of some service in staying the process. The therapeutic effect however was nil.

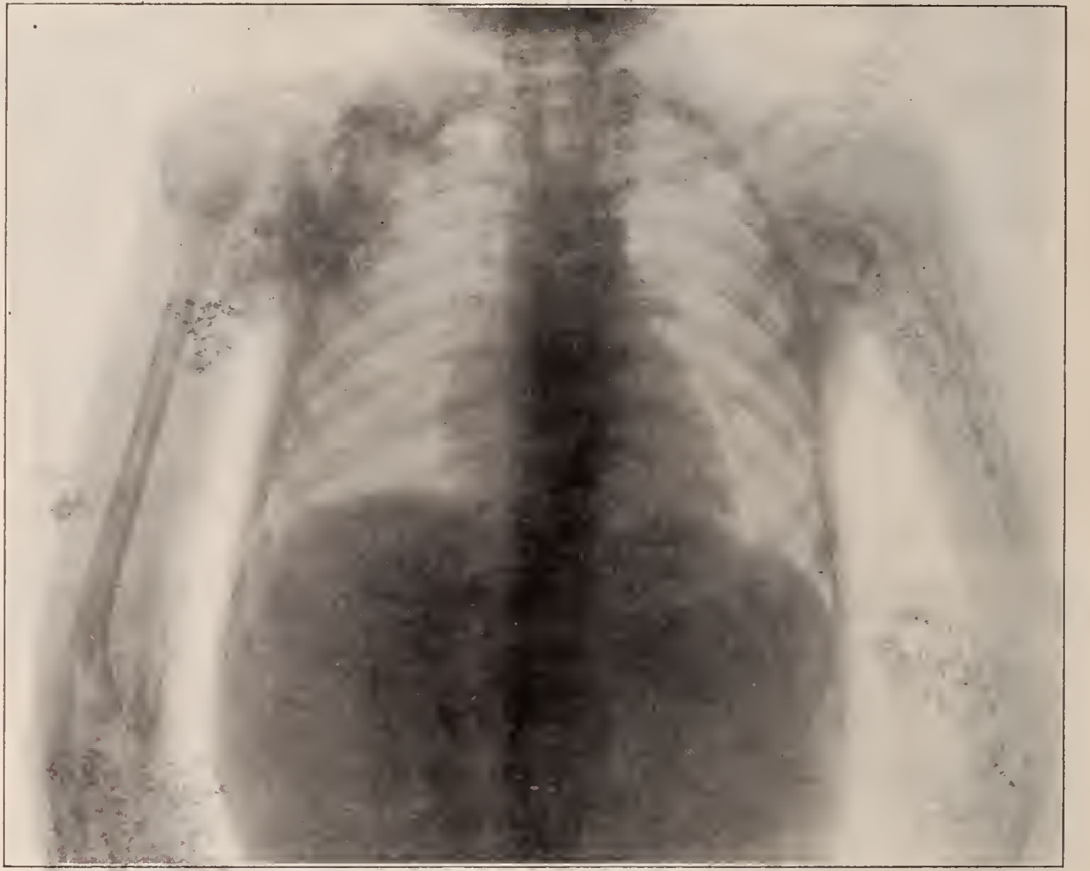

Fig. 9.—Extensive calcification around shoulders. These deposits are also present in the arms. They are practically absent in the forearms and hands. This peculiarity is also noted in the lower legs and feet. Absent around spine.

Following his recovery from the two operations by Dr. Babcock I took him to Boston during the meeting of the American Medical Association in June, 1921. He was placed in the Children's Hospital and was closely examined by Prof. John Lovett Morse, who had careful x-ray studies made. Here he was also seen by Abt of Chicago, and by Wabash of the Harvard Medical School, and others. None of these gentlemen were able to suggest either cause or cure. Morse had seen a somewhat similar case wherein, however, the deposits were slight and confined to the skin. This case has been reported. The idea of the probable benefits of a blood transfusion were discussed with these gentlemen and none seemed to think that the procedure would be of benefit. However, subsequent to this I took him to see Dr. Alfred Hess of New York, and inasmuch as he advised frequent small transfusions without any suggestion from myself on this point, and further as the idea had been in my own mind for some time, it was decided to try it. Up to date he has received two such transfusions from two nonfamilial donors. These were done by Dr. A. I. Rubenstone of Philadelphia, and myself. They have been too recent to judge of their effect. Dr. Wm. L. Clark also administered radium needles on one or two occasions, but abandoned the idea as useless.

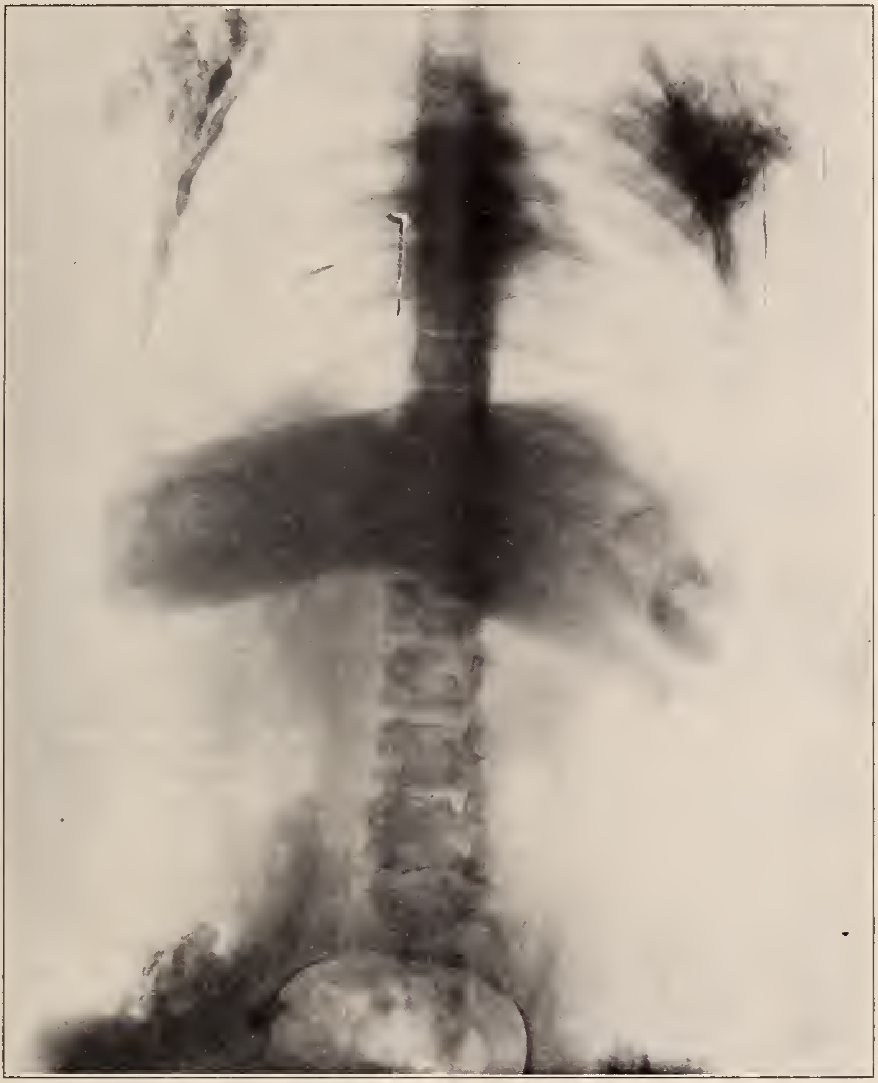

Fig. 10.—Another view of the upper portion of body. The right axilla has been curetted.

This case is thus reported in detail by reason of its rarity and its obscurity as to etiology and even as to its exact nature. It is probably noninfectious, more likely metabolic, although the latter suppostion must also be regarded as hypothetical. It is worthy of note that the calcium and phosphorus of the blood are quite within normal limits. The absence of heart involvement and its probable noninfectious character would exclude its relationship to rheumatism. The ear lobules are free of tophi. The large calcareous masses and the fact that some seem to have worked their way just beneath the skin, suggests the possibility of a condition akin to the classical cases of gout described as occurring with considerable frequency amongst ale drinkers in England. In these, chalky masses work their way to the surface until they are extruded through the skin. The internal organs are apparently free and no evidence of calculi in any of these has been present.

Since presenting this case, through the courtesy of Dr. D. D. Ashley of New York, I succeeded in having the lad examined by Prof. Adolf Lorenz of Vienna. Lorenz had never encountered a case of this kind. He suggested tenotomies and the encasement of the legs in plaster of Paris for six weeks in order to straighten them out, thus perhaps enabling the boy to walk. He offered no advice as to etiology or internal treatment.

The reader is referred to the various roentgenograms and photographs herewith presented and the accompanying explanatory notes.

2011 Chestnut Street.

CEREBRAL ABSCESS FOLLOWING OLD MENINGEAL HEMORRHAGE*

HENRY C. FLOOD, M.D.

PITTSBURGH

Cerebral abscess is an uncommon disease in early infancy and especially so before the fifth year of life. It usually follows in the wake of chronic suppurative processes of the middle ear or adjacent structures and may occur secondarily to infection of the nose or upper air passages. Traumatism of the head, associated with fracture, may lead to the development of cerebral abscess, or it may occur as the result of a general infection. Caries of the bones of the skull and the acute infectious fevers, especially influenza, may be causative factors in the production of the disease. In a summary of thirty-two cases of acute suppurative encephalitis, collected by Holt from the literature and from his own practice, the majority developed as the direct result of chronic otitis or followed trauma to the head with fracture of the skull.

The symptoms may be acute, with headache, vomiting, high temperature and delirium; or they may be chronic from the outset, with slow pulse, subnormal temperature, drowsiness, convulsions and coma, and occasionally some rigidity of the neck. The abscess may be entirely symptomless and remain latent for a long period. The diagnosis is difficult and has to be differentiated from meningitis, in the early stages, and from brain tumor later. Both meningitis and abscess may be preceded by a chronic discharge from the ear and, if the symptoms of the onset of abscess are acute, they resemble very closely those of meningitis. Lumbar puncture in itself is not conclusive evidence, as in some cases of abscess the fluid may show increase of albumin and leucocytes and the presence of an organism. The diagnosis frequently depends upon the duration and intensity of symptoms occurring in conjunction with one of the causes of abscess. With the chronic form, brain tumor can at times be ruled out in the presence of a chronic middle ear disease and a polymorphonuclear leucocytosis. The outlook of brain abscess depends entirely upon the possibility of early surgical interference, but, owing to the great amount of shock attending brain surgery in infancy, surgical intervention should be withheld until definite localizing symptoms are present.

J. F., six months of age, was the youngest of six children, all living and well. The father was living and in good health; the mother had been ill for the past four months with some infection of the gall bladder. There was no history of alcoholism, syphilis or tuberculosis in the family. The baby was a full term child, delivery not being difficult or prolonged. Four days after birth the infant developed convulsions and later his parents noted some stiffness of the legs. He could be nursed at the breast for only a short time, when he was placed upon condensed milk. He did not thrive well on this and gained weight very slowly. The father stated that the child had always been in poor physical condition. A few days prior to his admission into the West Pennsylvania Hospital the baby had suffered a generalized convulsion which, at the time, was considered to be of intestinal origin. He later developed rigidity of the neck. His condition grew progressively worse and he was admitted to the hospital in an unconscious state. On examination, he was found in extreme opisthotonos, with head markedly flexed, the extremities spastic, the legs flexed at knees and hips, and the entire musculature of the body contracted and rigid.

The ears were found negative, the pupils dilated, the right more so than the left, with little reaction to light and with a definite lateral nystagmus present. There was some discharge of pus from the nose, and the mucous membrane of the mouth and throat was congested. The heart was apparently normal. Over both bases posteriorly, a few crepitant and sibilant râles were found. The abdomen was markedly distended but otherwise was negative. The Babinski and Kernig were positive on both sides and the knee jerks increased. The blood Wassermann was negative, urine negative, blood count eleven thousand. The pulse was one hundred and irregular, respirations slow and temperature subnormal. Lumbar puncture fluid showed no evidence of pressure; cell count fourteen; Wassermann negative and globulin positive; culture and direct smear negative for organisms on three successive days. Complement fixation for tuberculosis was negative. Culture of discharge from the nose gave a gram positive diplococcus and staphylococcus. X-ray of the bones of the skull gave no evidence of pathology.

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Philadelphia Session, October 6, 1921.

Four days after admission, the temperature rose to 101°, and definite signs of pneumonia were made out in the bases posteriorly. Six days after admission the child developed marked internal strabismus. His condition became much worse and death occurred on the tenth day. A tentative diagnosis of old cerebral hemorrhage, pneumonia and meningitis was made. Report of the autopsy by Dr. Vernon Andrews of the Western Pennsylvania Hospital follows:

Body is that of a greatly emaciated male infant about six months of age. The abdomen is greatly distended and the abdominal wall is dark colored. Left side of face in the temporal and parotid region seems to be slightly swollen. The skin is very white and anemic. No edema.

Subcutaneous fat is absent, tissues moist, muscles very anemic. Peritoneum is smooth, a few cc. of clear fluid present. The intestines are greatly distended with gas. Liver pressed up under the diaphragm.

Thorax on the left side shows a slight exudate on its posterior wall, a few cc. of turbid fluid. Right side shows the same. The pericardium is smooth and shining, a few cc. of fluid present. The heart is firm, muscle of good consistency. Valves are normal. *Lungs:* Left is voluminous. Anterior part greatly dilated and pale; posterior part of lower lobe shows lobar consolidation. It is firm, dark colored, and is covered with a thin exudate of fibrin. Section of the lobe shows a dark red, moist surface. Scattered over this solid area are darker areas, size of pinheads, apparently the bronchi. The upper lobe shows some firmness in its lower posterior part. Section of the anterior part of lung is quite normal. The lower right lobe, posterior part, and posterior part of upper lobe are firm, dark red and covered with a slight exudate. Section of this shows a greyish moist surface. Fluid and material are very easily scraped away. The middle lobe is not involved. At the hilum of the lung, extending over a part of the lung substance, exposing the vessels and bronchi and spreading under the pleura of the mediastinum, an infiltration of air has spread beneath the pleura separating it from the underlying tissues. It seems to have come from some of the alveoli of the lung.

Spleen is firm and appears normal. Kidneys are apparently normal. The liver is pressed up under the diaphragm; the surface is smooth, normal color and firm. Section shows normal structure. The gall bladder is distended with a thin yellowish fluid. Duct patent. The adrenals are small, the cortex thin and yellowish white in color, the medulla light colored. The pancreas is normal. The stomach is distended and contains about 150 cc. of coagulated milk and fluid. The mucosa is normal. The duodenum shows six small ulcers, two of them quite deep, almost through the muscular wall, the others very superficial. They extend along the posterior wall to the ampulla of Vater. The intestines are distended with gas and contain only flakes of fecal material. The urinary bladder is distended with clear urine.

The scalp hair is greatly worn off on posterior part of the head. The skull sutures are united, although not smoothly. *Brain:* The right cerebrum is covered with a thick layer of pus which is especially prominent over the occipital lobe and extends on to the base of the brain. It involves the middle fossæ of the skull, extends on to the cribriform plate, surrounds the optic chiasm and surrounds the medulla oblongata. The right side of the brain is very soft and necrotic. There is considerable old blood clot on the surface of the occipital lobe and extending into the brain tissue. Pus on the left hemisphere involves the base of the temporal lobe, the sylvian fissure and the vortex of the lobe just back of the fissure of Rolando. Here the brain tissue is very soft and flabby. Section of the brain shows the right lateral ventricle to be greatly dilated, especially the posterior horn. Its wall is covered with an exudate, and considerable pigment, old hemorrhage, is present. The brain tissue covering the posterior horn is very thin and much degenerated. The left lateral ventricle is also greatly dilated and well-covered with an exudate. A small amount of old pigment is present in the posterior horn. Both optic nerves are very soft, edematous and degenerating.

Culture from brain gave an unrecognized gram negative bacillus, and from the lung tissue a gram positive diploccoccus, probably the pneumococcus.

DISCUSSION

Dr. Henry T. Price (Pittsburgh): Dr. Flood has given us a suggestion which I think is quite important in bringing out one of the primary causes of a good bit of disturbance in children. Unfortunately, we do not have a chance to study most of our cases as thoroughly as this case has been studied, and a number of deaths in children are recorded as due to the secondary condition. Here we have a very definite lung condition, which without the autopsy findings, would have been accepted as the cause of death and probably an infection of the meninges as secondary.

We know that quite a number of cases of hemorrhage occur. We have not reached a definite conclusion for the cause of many of these cases, but we do know that many occur and many patients seem to recover without any further trouble. We are surprised to know that many more of these brain hemorrhages do not become infected. I feel that brain abscess is far more frequent in children than we ordinarily suppose. As one studies the patients more carefully one is likely to find more cases of that kind. I think Philadelphia is a particularly good center for these cases, because you have more brain surgery, more careful brain surgery, done in this city than in most other cities, and I think men in this city can report a good many more abscesses than in other places.

Unfortunately, in the country districts, the doctors are often called to see patients with convulsions, and the patient dies. They put down the diagnosis as convulsions or different classes of meningitis without determining the cause. I feel that some cases of convulsions that are called spasmophilia are due to brain lesions. I can recall several cases which, unfortunately, did not come to autopsy, which suggested brain lesions, and I feel that if we had been able to study them more carefully we should have found brain abscess. Many of these cases showed an abundance of cells in the spinal fluid but with a sterile fluid which gave no indication of the cause. With the number of cases of infection that Dr. Flood mentioned in his paper we should suspect many more cases of brain abscess, but it is surprising how few cases are diagnosed following middle ear infection, for we know how simple it is to have a continuation into the brain. If some of these mastoid cases die the cause is put down as pneumonia or neuphritis or some other infection.

I feel that as our hospitals have more autopsies we will be able to put hemorrhage as a primary cause of a good many deaths, and in many of the cases the secondary cause will be an infection of the blood clot due to some specific organism causing abscess. Dr. Flood has presented a very important subject.

SELECTIONS

SOLID SARCOMA OF THE OVARY*

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For a given period sarcomas were found in 160 necropsies (1.25 per cent of all necropsies) at the Basler Pathological Anstall.[14] Twelve (7 per cent) of these were sarcomas of the ovary. Porter collected from the literature 2,995 cases of ovarian tumor, and from these concluded that 20 per cent of all ovarian tumors are malignant and 5 per cent are sarcomas.

With regard to the age incidence Bland-Sutton says, "The ovary is prone to become the seat of sarcoma in early life, followed by a period of comparative immunity, followed by a second period of renewed but diminished liability." He adds that sarcomas of the ovary are rather common under five years of age and occur with decreasing frequency until about the time of the onset of puberty. In adults there are two common periods, between the twentieth and thirtieth years and after the menopause. In one-half the cases the tumors are bilateral, grow very rapidly, often attain formidable proportions, and quickly destroy life. Removal is attended with a high mortality, and if patients recover from the operation, quick recurrence is the rule. Bland-Sutton collected 100 cases in which ovariotomy was performed in children under fifteen years. In twenty-one the condition was sarcoma. Seven of the children died soon after operation; four of those he was able to trace died within a year.

Doran reported a case of tumor in both ovaries in a seven-months' fetus, which lived only a few minutes after birth. He described the tumor as round cell in type and regarded it as "the persistence and hyperplasia of the entire embryonic tissue of the ovary of an earlier age." Hayd and Schwartz each report cases in patients aged twenty-three months. Involvement in both cases was unilateral. Smith and Motley's case was bilateral in a girl of three years. Death from recurrence occurred in seven months. Higgins reported three cases in patients aged five, seven, and twelve years, respectively. He calls attention to the chief symptoms of this condition as insidious in onset, unexplained colicky pain, precocious menstruation, steady enlargement of the abdomen with fever and extension or metastasis.

Stewart reported a case in a patient, aged thirty-one years. The tumor had been present for two years. The patient complained of dysmenorrhea and increase in menstrual flow. She died three days after operation from ileus. The microscopic diagnosis of the right ovarian tumor was round-cell sarcoma. The left ovary was cystic and contained an angiosarcoma. In Foerster's patient, aged twenty-three years, the condition was unilateral. Microscopically, it showed fibrosarcoma of low-grade malignancy. Polak's patient was nineteen years of age and had lymphosarcoma of both ovaries which he considered primary although the same condition was present in the right breast and right supraclavicular glands. Brodhead reported a case of tumor of the ovary in a negress, aged eighteen years. The tumor was removed eight days after the delivery of a living child. It had produced acute symptoms in the abdomen due to the twisting of the pedicle. He believes that conservative surgery should be followed and only the involved organ be removed when the patient is in the childbearing age and wants more children. Judd had a similar case in a patient, aged sixteen years. The tumor was unilateral and acute symptoms were due to a twisted pedicle.

In the case reported by Briggs and Walker, the patient was twenty-nine. Symptoms of lower abdominal pain, swelling of the abdomen and menstrual disturbances had been present for three months. Both ovaries were affected and ascites was present. It was impossible to remove all of the malignant tissue and the patient died nine months later from recurrence in the abdomen. Pick collected twenty-three cases of sarcoma of the ovary. He concluded that it is common in young women, and that metastasis is late.

Jones and Jessett each reported a case in a patient, aged fifty years. In both cases, microscopic examination showed spindle-cell sarcoma. Lockhart found seven sarcomas in a series of sixty-five ovarian tumors.

Two cases of solid sarcoma of the ovary were found in thirty-nine cases of malignant solid tumors of the ovary in which operation was performed at the Mayo Clinic between January 1, 1910, and August 1, 1921. One of these was in a patient, aged forty-eight years, who was one year past the menopause. The tumor had been noticed by the patient two years previously. Her only symptoms were pain in the lower left quadrant of the abdomen and dysuria with frequency. Microscopic examination showed spindle-cell sarcoma. In a letter five years later the patient said that she had gained 20 pounds in weight and that her general health was good. The other patient was twenty-eight years of age. Her chief symptom was pain in the right side of the abdomen. She had had three attacks of acute appendicitis in the preceding six years. Examination revealed a movable, firm, pelvic tumor to the left of the uterus. At operation the appendix and left ovary were removed. Microscopic examination of the ovarian tumor, which was 6 cm. in diameter, showed spindle-cell sarcoma. Three years after operation she had no symptoms of recurrence and had gained 30 pounds in weight.

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*Extract of thesis submitted to the Faculty of the Graduate School of the University of Minnesota in partial fulfillment of the requirements for the degree of Master of Science in Surgery, March, 1922.

†Fellow in Surgery, Mayo Foundation.

The history in cases of solid sarcoma of the ovary is little different from that in cases of solid carcinoma. Physical examination likewise demonstrates a pelvic tumor which, on palpation, gives a sensation of solidity and firmness, in contrast to the sensation of elasticity and fluctuation usually present with ovarian cysts.

The diagnosis of solid sarcoma of the ovary is seldom, if ever, made clinically. As in solid carcinoma it is usually made by the pathologist. The treatment is the same in both conditions. In cases of sarcoma of the ovary, Coley's serum (dead cultures of *Streptococcus erysipelatis* and *Bacillus prodigiosis*) may be of some value. Coe and Coley report a case in a woman, aged thirty-two years, who had an exploratory laparotomy, and a diagnosis of inoperable ovarian malignancy was made on account of the size of the growth, local extension, and adhesions. She was given forty-seven injections of Coley's serum and twenty-two roentgen-ray exposures. These caused a decrease in size of the tumor and it was removed surgically. Her menses then became regular, and she gave birth to a normal living child fifteen months later. Two years afterward she died from bronchopneumonia and questionable recurrence in the lungs.

The prognosis of operable solid sarcomas of the ovary in adults is much better than in solid carcinoma. The prognosis in adults with inoperable sarcoma is practically as hopeless as in carcinoma. The prognosis in children with solid sarcoma, as shown by case reports in the literature,[1, 8, 11, and 12] is much less favorable than in adults. From 80 to 90 per cent of children died from recurrence in from six months to one year. The relative difference in prognosis is what would be expected from the microscopic findings, as the sarcomas in adults are usually of the spindle-cell type, or fibrosarcoma, while those in children are usually of the small round-cell type, or lymphosarcoma, which is the most malignant of all types of sarcomas. The operative mortality in young children with this condition is high. Various authors estimate it from 25 to 35 per cent. In Porter's series of cases, three of his own and twenty-six collected from the literature, only three patients remained well for three or more years.

CONCLUSIONS

1. Approximately 20 per cent of all ovarian tumors are malignant.

2. Solid sarcoma of the ovary is the rarest type of ovarian tumor; 1 per cent is the approximate incidence.

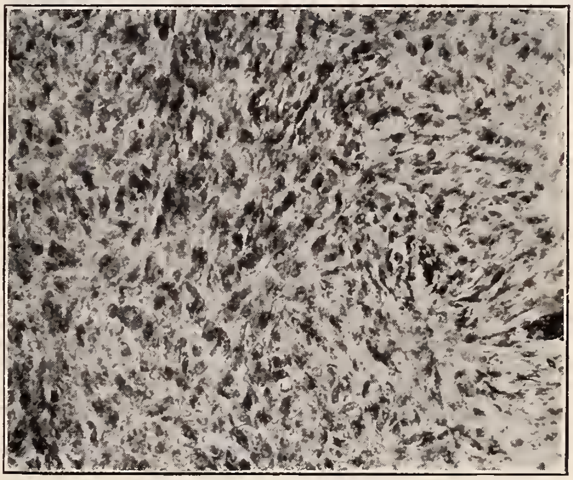

Fig. 1. Solid (spindle-cell) sarcoma of the ovary (x 200).

3. A review of the literature shows that in children the tumor most commonly occurs in those under three years and is decreasingly common up to fourteen or fifteen years.

4. The two periods of usual occurrence in adults is during the third decade and after the menopause.

5. Diagnosis and differential diagnosis offer the same difficulties as in other solid tumors of the ovary. The diagnosis is seldom made except by the pathologist.

6. The treatment is the same as in cases of solid carcinoma of the ovary with the possible addition of Coley's serum, which may be of questionable value.

7. The prognosis in adults is better than in children.

8. The prognosis in adults is better than in solid carcinoma of the ovary. The prognosis in children is bad on account of the high operative mortality, and the early and fatal recurrences.

9. If the tumor is unilateral and encapsulated, and if the patient is in the childbearing period and anxious to bear children, conservative surgery should be employed and only the involved ovary and adjacent tube should be removed.

10. As shown by one case in the series, and by the review of the literature, menstruation may be regular and normal in amount following unilateral ovariotomy for this condition. Normal gestation and delivery may also follow.

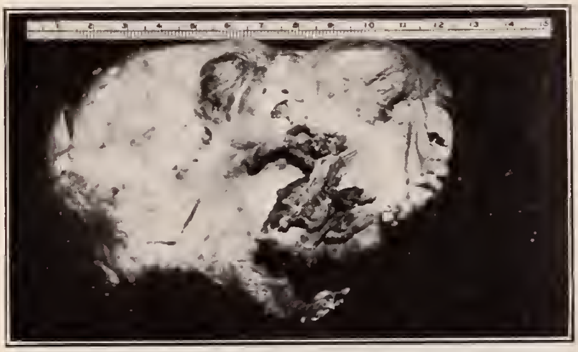

Fig. 2. Sarcoma of the ovary in a woman, aged twenty-eight years. Surface view.

11. Solid sarcoma may be accompanied by the same complications as other ovarian tumors.

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MEDICAL PROGRESS AND ITS DEPENDENCE UPON PATHOLOGY*

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A few years ago the science of pathology consisted in being familiar with the gross and microscopic appearance of tissues and a few, fixed, definite characteristics of the more important bacteria. How this has changed! The modern clinical laboratory has been born and is fairly well reared. In its education it has taken on a much wider scope to bacteriology, a new development of serology, a widening importance to chemistry and a broader field in public health and hygiene. What has happened to the older pathology of Virchow? It has not disappeared but its attractiveness to new workers has been dimmed and I fear many laboratory aspirants are forgetting that a thorough understanding of gross morbid processes with their altered physiology is the basic rock upon which they must build, if their future progress is to keep pace with the remarkable achievements of the recent past.

There have sprung up in the last decade or so countless laboratories of more or less national repute and numerous others of local character, some of which I fear are commercialized and the actual work being done by lay technicians. As a result numerous differences of opinion are constantly occurring. Are those in charge thoroughly trained to pass upon the malignancy of tissues one minute, read the colorimetric comparison of blood sugar the next, decide upon the virulence of a culture of B. diphtheriæ and then reason out why the Wassermann reactions are not turning out well for that day?

This may be answered in the negative by saying that one man cannot be the final word for all these departments but that several workers, each expert in his own line, are there to decide. This happens in a few laboratories at and outside of teaching centers but it does not hold in many of the smaller laboratories.

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*From the Department of Laboratories and Research Medicine, The George F. Geisinger Memorial Hospital, Danville, Pa. President's address read before the Montour County Medical Society, January 20, 1922.

In the larger cities good laboratory facilities are available on every hand. Would it not pay to centralize and concentrate many of these that more and better work could be done, and then distribute the workers who are now duplicating to smaller cities and even towns where little if any work is even attempted?

I am familiar with several towns and even cities where absolutely no laboratory work is done, and with several more where only the mediocre work of a lone technician is available. To the practitioner of medicine dependent upon pathology in these localities, the answer is that he is just as dependable as elsewhere, and the character of the work accomplished by the clinician is in proportion to the amount of laboratory aid available.

What is the result? Many of the clinical cases go from bad to worse; a gastric ulcer limps along on a diagnosis of dyspepsia treated with somebody's dyspepsia tablets, while a cancer develops, progresses and dies, sometimes without a diagnosis to the end. If this does not happen the patient is referred to a center where the proper diagnosis is made, after greater or less expense and inconvenience. What is worse, this is for the exceptional case and not for the rank and file. The state has attempted to solve the problem, but one laboratory cannot possibly hope successfully to cover such a large territory. In some communities the doctor who hardly ever does a urinanalysis could not be expected to interpret an accurate report on blood chemistry.

The practice of medicine will go forward in spite of cults and isms; but the laboratory with dependable aids must be made available in every community if that practice is to hold its head and shoulders above the unscientific methods, and even the gross inaccuracies, of the various new dogmas. In fact, that basic rock of knowledge must succeed in the long run and must outwit all bids for popular favor in the future as it has done in the past. The laboratory has at its command right now many indisputable facts and it is adding to the list new ones every day. These facts are available for the intelligent handling of cases by the clinicians. When not made use of, and what is worse, when a large majority of the profession not only does not make use of them but does not know that they exist, what can be expected?

A chiropractor with his fanciful and suave explanation of a case may be just as nearly right when he is adjusting the pain under the shoulder blade, due to gall-stones, as the practitioner of medicine is, when he has treated that same case for a month for lumbago. This is not an indictment, it is an appeal, first, for more thoroughly trained laboratory men who shall devote their full time to the laboratory and shall be paid in accordance and not less than other experts in their lines; second, for a wider distribution of these laboratories in the smaller cities and towns; and third, for an educational propaganda among the profession at large so that the general practicing physician will want to make use of the laboratory and know intelligently what to do with the data after receiving it. I have personally found a very receptive attitude on the part of the profession and a willingness to make use of this work after it has been explained to them. I believe that if the medical men as a body will take advantage of what they already have developed and use it, including laboratory aids as one of the most important integrals, they need have no fear as to what public opinion will say of the fly-by-night and get-rich-quick-pathies' development all over the country at the present day.

I have not touched upon the dependence of medicine for its very life and development, as far as research is concerned, upon its relationship to the laboratory. We need have no fear for the future in this respect. A glance over the names and the work of our prominent laboratory men all over the country is all that is necessary to insure that a great confidence in the future will be fulfilled. The men who have taken up this work have sacrificed many things that other more fortunate members of the profession acquire; but the pleasure of doing a certain thing well, another thing for the first time, of establishing a new fact here, confirming an old one there, or of disproving a theory, are sufficient to make up for the loss of other more fleeting rewards and will in the future keep that side of the laboratory ever in the forefront of medical progress.

In conclusion, the laboratory, and by that I mean pathology defined as the study of disease, is one of the pillars for the foundation of medicine. It is constantly widening its scope, requires years to become proficient in and is now available as a clinical aid.

Within its own ranks the laboratory must regulate commercialism and too wide distribution of insufficiently trained lay workers, it must continue to stimulate younger men to start out thoroughly grounded in pathology and it must see that awards are sufficiently remunerative to attract a larger number of workers.

It would be wise to look to a more even distribution of well-trained men in districts where the laboratory is almost unknown, and once they are established, to gain the coöperation of the profession for the use of its diagnostic aids.

As far as the science of medicine and its dependence upon pathology is concerned, that is conceded by all. Future progress will be as admirably carried on by earnest workers throughout the world as it has been by immortals, such as Pasteur, who characterized the past. The writer is optimistic enough to believe that pathology will be the future bulwark against which the isms will wreck their flimsy crafts and that pathology will supply reactions into which their unstable suspensions will be inertly precipitated.

ACUTE STRAMONIUM POISONING

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On August 16, 1921, about 7:30 p. m., three boys, J. M., aged 12 years; F. V., aged 10 years, and R. M., aged 8 years, were admitted to my service at the Children's Hospital with the following history: About 4:30 on the afternoon of the day of admission, while playing around an unfrequented ledge of rock in the heart of the city, they were invited, by an unknown adult, to eat some berries that were growing in this locality. The berries were cut open and the contents given to the children who ate them in varying quantities. At 6 p. m. the children arrived home and the first the mother knew of any trouble was when she found her two boys lying on the floor complaining of being very dizzy and at times they were delirious. When they attempted to walk they would stagger and almost fall down. They told what they had done and were immediately sent to the hospital.

Examination showed face flushed, pupils widely dilated and fixed, voice weak and speech thick, showing a partial paralysis of the throat muscles, mucous membrane of the mouth and throat very dry. Muttering delirium and periods of hyperexcitability alternated with periods of stupor, during which the respirations and pulse were slow and full. Reflexes were increased and on attempting to walk, the gait was staggering and uncertain.

Treatment: The stomach was thoroughly washed out. The washings contained small whitish and brownish seeds about the size of a millet seed. One ounce of castor oil was given through the stomach tube. They were put to bed and 1/12 grain of morphine given subcutaneously. During the night the children were delirious and restless, at times crying out as though frightened. The two older boys continued to be delirious during the next 24 hours, after which they rested quietly. The youngest child, aged 8 years, who ate only a small amount of the fruit, appeared mentally clear after 18 hours. They were kept in the hospital three days, at the end of which time complete recovery had taken place, except that the pupils remained dilated but reacted to light.

The temperature at no time was over 100°. The pulse ranged from 80 to 100 per minute and the respiration 20 to 30. The urine examinations were negative except that of the boy aged 10 years, which showed a trace of albumin and a 2 plus aceton.

Dutura stramonium or "Jimson weed," the commonly used name of this well-known plant, is a coarse smooth weed of annual growth with an upright, branched stem, long ovate, coarsely dentate leaves and long bell-shaped flower. The plant grows on an average of 3 to 6 feet in height and is found in rich soil around old gardens, barnyards, docks, etc., The fruit is erect, ovoid in shape, at times as large as a hen's egg, and covered with rigid spines. The seeds are in four divisions inside the pod, very numerous and whitish to brownish in color, depending upon the stage of development.

The name "Jimson weed" has its origin in the fact that it was first introduced into this country through the port at Jamestown, from which it spread rapidly throughout the United States. It is a native of Asia but is naturalized in most temperate and subtropical countries, being especially common in this section.

Daturine, the name formerly given to the stramonium alkaloid, is now known to be identical with hyoscyamine or atropine or a mixture of the two in undetermined and very variable proportions. The seeds contain about ¼% atropin, the leaves not more than one-third as much. A high percentage of hyoscine has been extracted from the stramonium seeds.

The physiological action of stramonium and its alkaloids is almost identical with that of belladonna and atropin except that stramonium is a little more hypnotic than belladonna.

Being unfamiliar with any plant growing so commonly and having a typical atropine action, I asked one of the parents to get and bring me some of the pods similar to the ones the boys had eaten. The plant was rather easily identified as that described above and the typical atropine action understood.

Review of the literature for the last ten years revealed reports of but 10 cases of acute stramonium poisoning. Nine of these reports appeared in foreign journals. The one case reported in this country during this ten-year period was by McNally[1] in 1915. This case showed no symptoms for 7 hours after ingestion of the poison and died in 13 hours. Autopsy showed nothing characteristic except numerous petechia over the epicardium. The literature does not contain sufficient data to serve as a basis for even an approximate estimate of the lethal dose of stramonium. Allen[2] reports a case that died in 7½ hours. The stomach contained 89 seeds. Duffin[3] reported death in a child, 2½ years old, after swallowing 16 grains of seeds. A girl,[4] aged 8 years, swallowed 237 seeds and recovered. Since this weed is so common and easy of access to children, it is singular that more cases of poisoning are not reported.

818 Westinghouse Building.

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IN MEMORIAM

DR. CHAS. MILLER

Whereas, Dr. Chas. Miller, a member of the Schuylkill County Medical Society for many years, has departed from this earth and has passed to the Great Spiritual Life, and

Whereas, Dr. C. D. Miller was born in Hamburg in 1861, and when a boy moved to Mahanoy City. He was educated in the Mahanoy City schools where he graduated and later entered Jefferson Hospital, graduating in 1884. He opened an office in 1884 and later moved to Pottsville, where he has continued to practice his profession for over thirty years.

Whereas, Dr. Miller was well known throughout Schuylkill County as a physician of broad views and experience in diseases of the body. Socially he was interested in the Y. M. C. A. and other fraternal and charitable organizations. He was an active member of the County, State and American Medical Societies.

Whereas, Dr. Miller was a physician interested in the welfare and an advocate of preventative measures in civil life, in religious life and his professional life. Therefore, be it

Resolved, That in the death of Dr. C. D. Miller the society loses a faithful coworker and the community a respected and progressive citizen. And further be it

Resolved, That we extend to his family our sincere sympathy in their grief; and that a copy of these resolutions be spread on the minutes, also that a copy be sent to the family and to the State Medical Journal.

Wm. F. Doyle,
Geo. H. Moore,
Ivon B. Fenton,
Committee.

COMMUNICATIONS

Editor, The Pennsylvania Medical Journal,
Harrisburg, Pa.

Sir: The editorial in the September number entitled *"The True Attitude of the Physician Towards Drugless Therapeutics,"* came under my eye just after I finished reading the article in the *Atlantic Monthly* by Dr. Frothingham. The article is deserving of comment and commendation which you give it.

But the thing about the article which impressed me most of all was the admirable spirit in which Dr. Frothingham handled the subject. All the way through he exhibited the spirit of fair play and common sense and self-restraint which must be appealing to the general audience for which he wrote. Never once in his article is there the slightest evidence of sarcasm, sneer or ridicule. I am convinced that we have done ourselves much harm in the past by using these implements. I am further convinced that Dr. Frothingham has helped his case much by letting them alone. The Sage Franklin said: "The meanest bee has a sting and may use it." Would that the method of approach so well exemplified in Dr. Frothingham's article would become general among us. Yours truly,

Theodore Diller.

Pittsburgh, September 22, 1922.

To the Editor of The Pennsylvania Medical Journal.

Dear Sir: Looking over the last number of The Pennsylvania Medical Journal, I naturally read "The Doctor of the Old School." I cannot resist the temptation to congratulate you on having printed the famous MacLure incident; it is a great story that cannot too frequently be read. It ought to find place in the curriculum of medical schools.

I am reminded of a story Weir Mitchell was fond of telling. Sojourning in the countryside of a far-off land, he was taken ill, and applied to the physician who resided in the district. The cure completed, Mitchell called to say farewell, and offered the doctor a substantial fee. Declining this honorarium, he said: "Ah, no! I cannot take it; you will pass the service on." "And," said Dr. Mitchell, in relating this incident, "I have been passing it on ever since." These are good things to remember, are they not? Yours sincerely,

George E. de Schweinitz.

Philadelphia, September 22, 1922

THE PENNSYLVANIA
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October, 1922

EDITORIALS

RADIODERMATITIS IN RADIOLOGISTS

Radiodermatitis in radiologists, or those working with the x-rays and radium, deserves new consideration because of the increased interest in radium and the x-rays as used in medicine. It is assumed by those who are not well grounded in the subject that these dangers have been eliminated, when, as a matter of fact, there is more danger to-day than ever before. The danger is increased: 1st, because radium is more extensively used; 2d, it is more widely distributed; and 3d, it is used by those who have given little or no study to the underlying principles or dangers. Up to the present time, there are no legal requirements nor legal measure of efficiency; yet the mere possession of a quantity of radium, whether large or small, is no more guarantee of efficiency in its use than the possession of a set of surgical instruments is a guarantee of efficiency to use them in performing an operation.

Radium is supposed by some to be a mysterious, powerful agent that will perform miracles, if only brought somewhere near diseased tissue. In handling, it gives no sensation and therefore is supposed to be harmless, while as a matter of fact it can do irreparable damage to those who handle it carelessly. The means of protection are at hand, and if used intelligently will prevent damage.

The increased use of the roentgen rays for diagnostic purposes by the general practitioner and general surgeon, because of the convenient, small portable outfits, has added a very grave danger. These portable outfits have been made nearly fool-proof both electrically and mechanically, but their danger has not been eliminated nor appreciated. Within a brief period of time, three serious cases of radiodermatitis have come to our attention, in physicians who were operating their own portable outfit. Case A. was in a surgeon who attempted to remove a foreign body under fluoroscopic guidance, resulting in a sloughing dermatitis on the part of the patient, and serious and permanent damage to the surgeon's hands. Case B. was in a general practitioner who used a portable outfit to set a fracture of an ankle, resulting in a dermatitis on the part of the patient, and complete loss of all the skin on one hand of the physician, with great swelling and suffering. Case C. occurred in an up-to-date young surgeon, who knew better but took chances, and in the process of the removal of a foreign body under fluoroscopic guidance obtained a severe second degree radiodermatitis. He will probably recover, but why should such preventable accidents occur? The x-rays are no less dangerous than ever, but means are at hand for protection, and barring some unusual idiosyncrasy, there is no danger.

Unfortunately, these examinations are undertaken by those who are unfamiliar with the principles of roentgenology and protective measures, but they are also unfamiliar with the x-ray image and its diagnostic characteristics. As a consequence, they must expose the patient and themselves many times longer than the expert, in order to get a satisfactory idea of the conditions. Further, these men do comparatively little work, and therefore are insufficiently equipped. They work under unusual difficulties, especially without sufficient darkness, and sensitivity of the eyes, and with a lack of protective devices.

This editorial is written with the idea of adding caution, and preventing these horrible and unnecessary accidents. "A word to the wise is sufficient." G. E. P.

CONTROL OF CANCER

The American Society for the Control of Cancer was organized "to collect * * * and disseminate information concerning the symptoms, diagnosis, treatment and prevention of cancer." To this end committees have been formed in various states and groups of states. The organization in this state has extended into the counties and there are now committees in forty-five counties. These committees have been appointed by the County Medical Societies. Last year the national body endeavored to further the dissemination of information on cancer by means of a National Cancer Week. This plan was so successful that it was decided to repeat the effort this year, and the week of November 12th to 18th was selected as the time. The committee in this state has thought the most good could be accomplished through the coöperation of organized medicine. With this in view the county committees were formed and they have now been asked to hold "Cancer Days" meetings for their members and for the laity during this week. It is the policy of the Society to avoid terrifying propaganda and to dwell forcefully on the value of early diagnosis and removal of suspicious conditions.

The mortality from cancer has steadily increased despite improvement in surgical technique. Research costing vast sums has not yet affected this steady increase. The hope for improvement seems to lie in the perfection of means for early recognition and the removal of all growths which are in the early stages, or which later may possibly degenerate. As was said of the appendix, it is better to remove some which are healthy than to keep one which is diseased. In twenty years of agitation the death rate in tuberculosis has been markedly decreased. "What education has done for tuberculosis, it can do for cancer." This is a worthy cause for physicians to enlist in. It is worth while for all county societies to take part in this work and to devote some time in "Cancer Week" to the propaganda. H. D. J.

MEDICAL WRITERS AND LITERARY ABILITY

From the mass of material published in medical journals it would appear that the art of expressing ideas, accentuating facts and constructing readable sentences, is an unknown quantity among the majority of medical men. It is true that medicine has given to the world many able literary men, and to-day some of the foremost literary men are physicians, and some prominent physicians are literary men. If a physician has an idea that he thinks worthy of attention and has not the education, training or time to find words for that idea, would it not be wise for him to turn it over to some colleague who possesses these qualifications, to write up the article? It is distressing from time to time, and confusing to read over the influx of raw and unshapely material that comes to the editorial desk.

Let those who aspire to write down their own ideas remember that to make themselves understood it is always necessary to find the word or words, by which these ideas may be most fitly and aptly expressed. This fact is evidently not understood by many writers for the medical press.

Medical men do not hesitate to step into the literary arena without experience or preparation, forgetting that writing is a branch that calls for study and training as well as any other special branch involved in the pursuit of scientific knowledge. The communication of our thoughts by means of language, whether spoken or written, like every other object of mental exertion, constitutes a peculiar art, which, like other arts, cannot be acquired in any perfection but by long continued practice. F. C. H.

THE PROFIT, NOT THE COST OF MEDICAL EXAMINATION OF EMPLOYEES

Every physician, whether he be a general practioner or specialist, should at times pause in the study of medicine and study economics so as better to expound the value of medical examination to employers of labor. either common, semi-skilled. or skilled. as this examination necessarily at times requires the services of men connected with the various specialties.

Big industries and commercial houses spend large sums of money to devise ways and means to prevent or reduce to a minimum labor turnover. being fully aware of its excessive cost. Small establishments without an elaborate clerical force seldom conduct such an investigation.

Every man or woman physically unfit, employed and discharged in a short time, costs the employer, at a conservative estimate, fifty dollars. Some statisticians figure that in dull times when few are employed this cost exceeds one hundred dollars. A number of factors enter into the estimate besides the clerical expense of the employment office and its overhead, viz.: loss of production. cost of time of interviews by superintendent and foremen, cost of instructors' time, value of material damaged or destroyed.

The usual physicians' fee for examining the individual, when subtracted from the estimated cost of employment, would thus yield to the employer a very handsome profit, in addition to the benefit derived by the individual examined in the discovering of diseased conditions amenable to treatment and the selection of the proper occupation for one with a permanent defect, these being just an indication of the many advantages to the employee. Thus we see that a medical examination is an asset of great value, and a profit to both employer and employee.

G. H. C.

GROUP MEDICAL CLINICS

Martinet, noted French physician, has stated that "mistaken diagnoses are made through gross ignorance, relative ignorance or conditions at present undiagnosable. Second, faulty examinations, which are due to bad habits in diagnosing, defective diagnostic procedure, examination under unfavorable conditions, unsatisfactory patients and faulty technique. Third, errors of judgment may be due to ignorance, obsession, false reasoning, pride and vanity."

Diagnosis and treatment are the two essential acts in the practice of medicine. The treatment, although the chief end in view, is manifestly dependent upon and subordinate to the diagnosis. The diagnostician, from the practical standpoint, must set before himself the task of obtaining an understanding of the case before action is proceeded with. That is, in the last analysis he must seek out in the morbid condition present the factors which afford therapeutic indications.

The science of diagnosis is far from having obtained an unvariable state of perfection and while constantly being developed is still markedly imperfect and unstable. One of the methods of providing better diagnosis has been the inauguration of group medical clinics comprised of physicians handling various specialties, who collectively render a diagnosis, particularly in cases where there is doubt as to the cause. This system has advanced much more rapidly in the western section of the United States than in the eastern section, and is not only popular but is working out to great advantage.

The United States government saw the wisdom of this method of diagnosis when they established group clinics in connection with the United States Veterans' Bureau. These clinics are located in various sections of the States and consist of a general examiner who first sees the case. After the history has been thoroughly taken and after the initial examination, the findings are further checked up by specialists along various lines, so that by the time a man has finished with his examination he may have been seen by the General Examiner, Chest Specialist, Neurologist, Orthopedic Surgeon, Dentist, Roentgenologist, Bacteriologist, Eye, Ear, Nose and Throat Specialists and perhaps by the Surgeon. All the facts having been collected in his case, as nearly perfect a diagnosis is rendered as is possible. The case then is referred for treatment to the section to which it properly belongs. That is, if it is really a case of pulmonary tuberculosis it is then handled by the Respiratory Section, and if he has a number of ailments which should be handled by the several specialists, such is done.

Many smaller private clinics are arranged somewhat similarly, the patient thereby receiving not only the opinion of one but that of several men, which makes it much more likely to be correct and does away with many of the causes of improper diagnosis.

It is, therefore, hoped that more group clinics will be established in our own state, as there is no question as to their advantage in diagnosis and treatment.

F. F. D. R.

HOSPITAL STAFF MEETINGS

There is nothing that quite takes the place of a properly organized and functioning hospital staff society. The county medical society and the many special societies serve their purpose well, but in a hospital averaging one hundred and fifty to two hundred beds, with the material at hand, a postgraduate course is waiting to be developed, and here do we find the very best type of "group medicine." The confidence in brother members born at the staff meetings makes for group diagnosis in that institution.

With each member who is on service reporting the number and character of his cases, the deaths, infections, complications, errors in diagnosis and a report of the follow-up of cases discharged from the hospital the preceding month, concluding with a report and discussion of especially interesting cases, with exhibition of specimens, there are none but will admit a profitable evening has been spent.

The standard of the hospital depends to a great measure on its staff and is as high as the individual members care to make it. Dilatory, uninterested members have a depressing effect and only hinder the progress of the greater number, and there is no reason why they should be tolerated. When not in sympathy with the aims of the society and unable to work in harmony with the majority, they should resign, for surely the whole staff cannot be out of step with one or two individuals.

Should one department show weakness the attention of members on that service should be directed to the fact that they are not holding up their end and that the hospital standard is in danger.

A staff meeting at least once a month, with the members working in harmony and loyal to the institution is a great power for good in the community, for not alone is a hospital a place for taking care of sick people but it is the center of the best thought in medicine and surgery in that vicinity, and this thought and the inspiration for the people should emanate from the hospital staff. A. J. S.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

MEDICAL ORGANIZATION AND ITS PROFIT TO THE DOCTOR

The wheels of progress were put into motion and are kept in motion by the unanimous realization of industry, business and profession that no one individual exists without an obligation to society, of which he is a component part, and that common good is immeasurably greater than individual avarice. Working on this plan the fences of the old settlers were theoretically and practically torn down and affiliations in profession and business were made imperative, to keep step with the rapid strides of world progress known as civilization.

The abolishment of the one-man business and the tearing down of the tall fences which secreted and kept apart neighbors resulted in the production of an atmosphere which to-day is the corner stone of society and makes every man and woman representative of America's symbol of ideals—E. Pluribus Unum.

The apostles of the medical profession have acted upon this elevating principle long before captains of industry and business realized its full importance, and prompted by humanitarian and unselfish motives gave their lives, their brains, their ardor and their service willingly and at the cost of sacrifice, monetary and physical, to build up and establish a group of men and women who would look after the perplexities and physical difficulties of the rest of society. Their laborious undertaking has established a monument greater than any built of material things: it is the present-day medical profession, which in this country is represented by the American Medical Association and its constituent state and county societies.

The ethics and the methods of this organization are both altruistic and protective, zealously endeavoring to accomplish the greatest amount of good for public and profession. To propagate these principles, to add to their immortality becomes the privilege and duty of every physician. The first step in this direction is the act of joining the County, State and National Medical Societies.

Let us leave for a moment the altruistic view of the subject and let us analyze what the profits of being a part of this medical organization are.

1. It assures the physician's standing in the community, before the public, the law and the profession. The public, upon whom the physician is dependent, is informed of the self-sacrificing and ever dependable pillars of the medical profession, and it is also informed of the soundness of the platform which was put up by the same men in the organization of medical associations. The public also knows, or has access to the knowledge of the roster of the membership of this organization, and the absence of a physician's name usually carries the presumption of his non-eligibility. Doubtless it may be that this presumption is incorrect in some cases, indeed in the vast majority; however, it is undoubtedly so.

2. Organization provides access to a continuous postgraduate course. The component units of the American Medical Association, in the form of county societies, bring together once a month the best available medical talent to their respective scientific meetings, where through presentation of papers, presentation of cases and free-for-all discussion, the latest ideas, the newest practices, the most helpful and newly devised methods are freely given to those who attend. Time and again have I left the meeting room of our county society and overheard the remark from someone: "I have a case just like the one Dr. X. was talking about. It has puzzled me, and I am so glad I heard that paper." Profit of this nature, if it comes only once in a lifetime, means actual fees to the medical man.

3. Organization induces the sharing of trade secrets. Industry and business guard carefully certain principles upon which their success is founded. A medical man's soul is wide open at his scientific meeting, which helps to make him a success and in turn may help his fellow practitioners.

4. Organization establishes confidence in yourself through the association with the best the medical profession has, and through the meeting and chatting with its leaders, who, by the way, make up the bulk of those attending scientific meetings. Listening to these, exchanging views

with them, for which they are just as eager as are you, you become inspired and enthusiastic, you elevate your own standard to measure up to them; and when by constant association the time comes that you can propound the new and the plausible, you are fully repaid as you elevate the rest to your standard.

5. Protection from malpractice suits which may arise in the practice of even the best physician is another immeasurable advantage; for you can work along and know that as long as you do your best, all of your professional brothers will unite in defending you if some misunderstanding or misguided patient tries to recover damages resulting presumably from your negligence.

6. Organization helps in the elimination of professional jealousy and piracy. Basic characteristics, reverting to the type whence we came, spring up occasionally in all of us. A presumed injustice, a grouchy mood, an unpleasant word over a case, may breed bad blood, especially if one knows that meeting the other individual socially is not a likelihood. However, even the worst of us will be careful of his statements about his fellow practitioner, when he is liable to see him at the next county meeting, where he may come up and shake hands or possibly pass a plate during the annual dinner. It is hard to look in the face of the man from whom you "stole" a case a few days ago.

7. Another item of value is the maintenance of fees. No man practices legitimate medicine who does not willingly and gladly take care of his share of deserving charitable cases, without thinking of compensation; but we have an obligation to ourselves, which can be attained only if the business side of medicine is not forgotten. Medical organization will protect you in this.

8. A participation in a united effort to protect the population against cults and fads can be hoped for only if the medical profession stands united, and uses collectively its tremendous individual influence for the rights of the profession. This at present is the greatest profit which medical organization offers, and it is of sufficient importance, as it means, to put it briefly, beside the principle involved, dollars to the medical man.

It is not my desire or province to make any derogatory statements in regard to the practice of fads and cults based on faulty conception and fed on the ignorance of the laity; but I feel it as an urgent necessity to warn the medical profession of the ascending influence and the greatly increasing number of superstitious and medically ignorant adherents and supporters of all the practices that find their cradle in arrogant and ignorant quackery, which thrives because the medical profession is either too busy or too negligent to oppose it. In case of a serious illness, of course the last recourse is to the legitimate medical man in 99% of cases, so that means that 99% of the population is still actually the patient of the legitimate medical profession. If this profession stands organized and uses its influence in the enactment and enforcement of *one law,* providing that everyone who professes to practice medicine, involving therapeusis of any description, has to have the same premedical and medical training and has to pass the same examination, the so-called cults and fads would soon be extinct and their unscrupulous and victim-preying purveyors shorn of their covering mantles.

In conclusion, just a word of apology for my weak attempt to sound the profits of medical organizations. Those of you who are components of the organization know a good many more vital reasons than those I have tried to enumerate. This message is to the doubting few who have not been vaccinated, or at least not successfully, with the virus which carries the greatest benefit to the individual physician.

Lester Hollander, M.D.
625 Jenkins Bldg., Pittsburgh.

AUTUMN TIME

Autumn's canvas spread with colors,
  Royal purple, golden glow,
Russet brown and scarlet sumach,
  Ruddy apples on the bough.

Shadowed mountains for the background,
  Hillsides touched with sunset glow,
Melting into field and woodland,
  Where the purple asters grow.

Shut my eyes and see the cornfield,
  Wild grapes hanging on the vine,
Bluejays squabbling in the beech trees
  Over southward moving time.

North wind whispering in the treetops,
  Telling of the winter's cold,
Chestnuts ripening in the wood lot,
  Maples just a heap of gold.

Over river flowing softly,
  Rippling 'round the grassy shoals,
Shines the brooding hazy splendor
  Of the Indian Summer glow.

Dr. O. Pine queries:—Why is it that when you get the best of one of your confreres in an argument, he can often come back and devocalize you with: "The Mayos do it"?

GOLDSMITH REVISED

Ill fares the town to hastening ills a prey
Whose denizens the doctor fails to pay.

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

SOCIAL SERVICE INVESTIGATORS

None but reactionaries will deny the necessity for many of the existing social agencies dedicated to the prevention and mitigation of sociological problems that seem to multiply with the advancing years. Those who think far enough ahead, however, may sense certain dangers in connection with social relief that may approach the borderline of paternalism and lead far afield from the old-fashioned virtues of self-reliance and independence. It is at once apparent that most of the problems referred to have a close connection with health and sickness.

In recent years most hospitals, many dispensaries and a great majority of civic or social agencies offering free medical or surgical treatment have engaged nurses as social workers or investigators. The problem of eligibility for free sickness service is as old as the first "free dispensary." When employed as a social investigator, the graduate nurse who has never engaged in the private practice of her profession, or who has for a number of years been in a salaried position, has frequently lost touch and sympathy with the income-producing phases of the practice of medicine; and further, if improperly trained in her social work, her choice of beneficiaries for free sickness service may often be sociologically unfair to the beneficiary and to the neighborhood physicians, who are called upon to render twenty-four-hour-a-day sickness service to all, regardless of ability to pay.

Adjustment to changing conditions is necessary for the medical profession. We must come to think more and more of our responsibilities to our community; but in the meantime we must make some effort to stay the flood of uplifters, who too frequently pauperize their beneficiaries and at the same time deprive members of the medical profession of equitable opportunities for the earning of income adequate to the provision of home, office and educational equipment essential to good medical service.

The average agency offering free sickness service operates but a very few hours each week. In the meantime, people of the community concerned are dependent twenty-four hours a day upon the service of the neighborhood physicians. Enthusiasts for social relief should therefore take cognizance of the fact that the withdrawal of a large number of possible patients from the clientele of the physicians of a community may sooner or later result in a further diminution in the number of local physicians available for twenty-four-hour-a-day service.

RESPONSIBILITY FOR PUBLICITY

What individuals or organizations or publications do the people of your county consult when they seek knowledge regarding the best means of preventing sickness? What is the source from which they obtain knowledge upon which to base their opinions regarding hygiene and sanitation? Has your county medical society ever progressed beyond the stage of discussion or fault-finding regarding this important subject? Has your society a committee dedicated to the purpose of conveying proper information on sickness prevention in popular terms to the people of your county? Is your committee active?

Why not have such a committee in your society pledge at least twenty per cent of your society's membership to prepare lectures on subjects on which each of those members responding may be well qualified to speak? Having noted evidences of finished work on the part of those members pledged to prepare popular talks, why not submit your list of subjects to the various women's clubs, civic organizations and other societies interested in neighborhood progress? Promise them short, pointed, practical, well-authenticated advice bearing the approval of your county medical society. The people of your county are at present receiving in varied amounts and from varied sources public health information that should be presented to them through the county medical society.

You will be agreeably surprised at the reaction to such a proposal, and your speakers, improving as each repeats his lecture before various organizations, will become more and more expert in conveying invaluable information. Such county society committees are advised to have a sufficient number of lectures completed before submitting the list of subjects to civic organizations.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to September 16:

Adams: *Removal*—George A. Stock, from Glen Gardner, N. J., to 2531 N. Sixteenth St., Philadelphia.

Allegheny: *Removal*—Milton H. Bachman, from McKeesport to 314 N. Phelps St., Youngstown, O. *Death*—David McMasters, of Russelton (Jeff. Med. Coll.), Aug. 5.

Clinton: *Reinstated Member*—John Dumm, Mackeyville.

Erie: *Reinstated Member*—Eugene E. Kendall, Waterford.

Lehigh: *Death*—Alan L. Diefenderfer, of Slatington (Univ. of Penna., '08), Aug. 8, aged 41.

Luzerne: *Removal*—Fayette C. Eshelman, from Wilkes-Barre to 30½ W. Broad St., Hazleton. *Death*—J. Irving Roe, of Wilkes-Barre (Columbia Univ., '75), July 2, aged 68.

Montgomery: *Transfer*—Clark S. Long, of Lansdale, from Columbia County Society. *Death*—Albert B. Donaldson, of Bala (Univ. of Penna., '99), recently, aged 52.

Philadelphia: *New Members*—Ralph S. Bromer, 4429 Walnut St.; A. David Bubbis, 936 N. Fifth St.; John F. X. Cannon, 1941 Snyder Ave.; Baxter L. Crawford, Tenth and Walnut Sts.; John B. Haines, 1126 Walnut St.; Eugene P. Pendergrass, 3400 Spruce St.; Kempton P. A. Taylor, Hospital Cartagena, Cartagena, Colombia, S. A.; Leon C. Wells, 5733 Chester Ave., Philadelphia. *Reinstated Members*—Max Abramovitz, 165 W. Susquehanna Ave.; W. A. N. Dorland, 25 E. Washington St. (Chicago); Clifford F. Simmons, 1939 Hunting Park Ave.; Simon Tannenbaum, Beth David Hospital, Lexington Ave. and 113th St. (New York City); Frank M. Coyne, 516 W. Luzerne St.; Niles A. Martin, 246 S. 45th St.; Robert McCreight, 1340 E. Montgomery Ave.; S. B. McDowell, 925 N. Broad St.; Gerald D. O'Farrell, Jr., 1301 Allegheny Ave.; B. Alex. Randall, 1717 Locust St., Philadelphia. *Deaths*—Charlotte S. Farrington, of Philadelphia (Women's Med. Coll., '01), July 11, aged 43; John L. Cameron, of Philadelphia, July 26; George Y. MacCracken, of Philadelphia (Univ. of Penna., '76), July 26, aged 67; William H. L. Hale, of Philadelphia (Jeff. Med. Coll., '82), Aug. 7, aged 62; Alexander R. Craig, of Chicago (Univ. of Penna., '93), Sept. 2, aged 54.

Schuylkill: *Death*—Charles Miller, of Pottsville (Jeff. Med. Coll., '84), recently, aged 61.

Washington: *New Member*—John S. Hill, Cherry Valley.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of *per capita* assessment has been received since August 21. Figures in first column indicate County Society numbers; second column, State Society numbers:

Aug. 23	Clinton	25	7205	$5.00
Sept. 14	Erie	132	7206	5.00
	Washington	123	7207	2.50

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
Harrisburg, Pa.

THE SCRANTON SESSION

The seventy-second annual session of the Medical Society of the State of Pennsylvania was held in Scranton, beginning October 2d and concluding its meetings on the evening of October 5th. The history of this session is replete with enthusiasm, if the same were recorded as expressed by every member present.

The General Meeting was opened by the President, Dr. Frank G. Hartman of Lancaster, and the invocation was offered by the Rev. William L. Sawtelle, D.D., pastor of the First Presbyterian Church of Scranton. A most eloquent address of welcome was delivered by Hon. John F. Durkan, Mayor of the City of Scranton, which was followed by an address of welcome by the president of Lackawanna County Medical Society, Dr. James D. Lewis of Scranton. Dr. Thomas G. Simonton, Chairman of the Committee on Scientific work, gave a brief outline of the program which each member received upon registration. The various entertainments for the ladies and guests, as well as the entertainment provided for the members of the Society, were announced by Dr. Martin T. O'Malley, chairman of the local Committee on Arrangements.

The President, upon introducing delegates from other societies, called upon Dr. George E. de Schweinitz, President of the American Medical Association, who brought greetings from that Association to this Society. The program of that morning's session consisted of the President's Address and a paper by George H. Meeker Dean of the University of Pennsylvania Graduate School of Medicine. It was regretted that the address of Dr. Frank Billings of Chicago was omitted, due to illness which prevented Dr. Billings from being present. The papers of the General Meetings of Wednesday and Thursday furnished a variety of subjects of great value.

The Section on Medicine provided in the program of Tuesday, Wednesday and Thursday an array of talent which has seldom been excelled in previous sessions. This also was the story of the Surgical Section, the Section on Eye, Ear, Nose and Throat Diseases and the Section on Pediatrics.

On Tuesday night the local society entertained the visitors with their vaudeville and musical comedy in the club rooms of the Young Men's Hebrew Association. This was a delightful occasion. Larry Sharkey of New York, Con Mc-

Cool and Butch McDevitt of Wilkes-Barre and other attractions furnished the entertainment.

The visiting ladies had but little time unoccupied, as the local committee had provided automobile trips, luncheons and visits to the mills and factories in the vicinity of Scranton, which will be long remembered by those who had the pleasure of taking these sight-seeing trips.

The President's reception and ball, which was held in the Armory Wednesday night, brought out a large gathering of beautifully gowned ladies with their attendants. Dancing until a late hour was indulged in, and every one enjoyed the social intercourse usual to such occasions.

The Thursday night lecture by Ernest Laplace, M.D., LL.D., on the subject of "Louis Pasteur—The World's Greatest Benefactor," was a masterpiece of oratory which brought to the attention of the large audience the history of a great man. With this lecture came the close of one of the most delightful sessions held under the auspices of the State Society.

We must not forget to mention the Scientific and Commercial and Educational Exhibits, which the management provided and which were assembled upon the drill floor of the Armory. This spacious auditorium was beautifully decorated with bunting and the exhibit booths were surrounded by scenery, which added an attractive charm to the otherwise sombre appearance usually found at such exhibits. The 78 spaces provided for exhibitors were filled with every conceivable form of exhibit which the busy, active practitioner as well as the specialist, could view with profit. This year's exhibit departed from the usual custom and added the educational feature, which rendered to those who lead an active, busy life in the practice of medicine an opportunity to inspect the work of some of our more important educational organizations.

The Scientific Exhibit, furnished by Drs. Clark and von Poswick of Scranton and Dr. Keilty of Danville, and which consisted of microscopic slides, x-ray plates, pathological specimens and charts, beautifully illuminated, presented for the first time in many years an added attraction.

The members of the State Society who were unfortunate enough not to be able to attend this session missed a rare treat.

The total registration was 721.

Dr. O. Pine queries: Is not the apologetic "But it is perfectly ethical" a sort of self-convicting phrase? "The ethical" has no need of such verbal ballast.

THE GORGAS MEMORIAL FUND

A movement to create a fund to build the Gorgas Memorial Institute of Tropical and Preventive Medicine was considered by the Board of Trustees and reported to the House of Delegates of the American Medical Association at the St. Louis Annual Session. Following this report a committee was appointed to represent the American Medical Association to act on the project. The following were appointed: Dr. George E. deSchweinitz, Philadelphia; Dr. Charles W. Richardson, Washington, D. C., and Dr. Fred B. Lund, Boston.

The House of Delegates endorsed this movement to establish the Gorgas Memorial as a tribute to one of the most illustrious past presidents that that organization was fortunate in having. The following statement from the Executive Committee of the Board of Trustees was authorized for publication:

STATEMENT AND APPEAL FOR COÖPERATION

As a result of the stimulating suggestion of President Porras, of Panama, it has been resolved that a fitting memorial shall mark the humanitarian service of the late Major General William C. Gorgas, and the beneficent influence of his life and work on mankind throughout the world. Following the thought of President Porras, it has further been decided that this memorial shall take the form of a scientific institute for the study of tropical diseases and of preventive medicine.

No better place could have been selected than Panama City, the gateway between the Atlantic and the Pacific, where General Gorgas' well-planned and executed work made possible the building of the Panama Canal.

It is hardly necessary to call the attention of the medical profession to the far-reaching effects of General Gorgas' work on the welfare of the people of the whole world, especially in tropical and semitropical climates, and in all places subject to the inroads of infectious disease.

We of the medical profession remember him as our Surgeon-General during the early part of the World War. We remember his prompt recognition of the necessity of bringing into active service large numbers of physicians and surgeons from civilian life. We remember his genial and kindly nature, his high character, and his steadfast effort directed toward the organization and equipment of the Medical Corps of the Army. We remember the patriotic response. We remember him as a great sanitary officer, to whom we wish to pay a lasting tribute.

A central committee has been formed, with Admiral Braisted, retired, ex-President of the American Medical Association, as its president. The American Medical Association has appointed a committee of three to work in accord with the central committee, and through its members this appeal is made to the American medical profession.

The plan is to build at Panama an institute for the study of tropical and infectious diseases, with a hospital, laboratories, departments for research and all other facilities required in an institute of this character, erected and administered according to the most progressive, modern ideals. The Panamanian government, owing to the far-sighted, philanthropic vision of President Porras, has donated the great Santo Tomas Hospital, and also the ground on which it is proposed immediately to construct the buildings as they have been described. Dr. Strong has been appointed the scientific director.

In conjunction with this work in Panama, there will be established in Tuscaloosa, Ala., the Gorgas School of Sanitation, for the purpose of training country health workers, sanitary engineers and public health nurses, especially educated to deal with the problems peculiar to the Southern states.

An endowment of six and one-half million dollars will be required to enable the institute to carry on the work according to the plans which have been formed.

The Republic of Panama has demonstrated its sympathetic and practical interest in this enterprise with splendid liberality. The physicians of our country, and especially the members of the American Medical Association, surely will not disregard the memory of a former president, and will seize the opportunity to make in this respect a contribution of which they will be proud.

The campaign for funds is to be international. A large response is expected from North, Central and South America, since the nations of these countries have been the chief beneficiaries of the labors of General Gorgas. It is fitting that his coworkers of the American medical profession should be requested to respond generously to this appeal. It is hoped that every member of the American Medical Association will make as liberal a subscription as possible. Any sum will be gratefully received. Checks should be drawn to the order of the "Gorgas Fund" and should be mailed to the American Medical Association, 535 North Dearborn Street, Chicago.

The Medical Society of the State of Pennsylvania should be interested in this great movement, and we are sure that those of this state who are so financially situated as to be able, will contribute to this most excellent movement in honor of one of the greatest sanitarians that America has ever produced.

PROPAGANDA FOR REFORM

Laxatives.—*Untoward Effects of Laxatives.*—Lately a number of instances of cutaneous manifestations due to the use of phenolphthalein as a laxative drug have been brought to the attention of physicians, particularly by dermatologists. Now Underhill and Errico have demonstrated that when magnesium sulphate, sodium sulphate and potassium and sodium tartrate are administered experimentally in doses capable of producing diarrhea, a distinct concentration of the blood may take place. The fact that purgatives exert a definite influence, in the direction of concentrating the blood, indicates that care should be exercised in the administration of purgatives in disease conditions, especially in those conditions known to be responsible for concentrated blood. Blood concentrated to some extent, and yet not sufficiently concentrated to be dangerous in itself, may reach a dangerous concentration by the added influence of the purgative (*Jour. A. M. A.*, June 24, 1922, p. 1964).

NEW AND NONOFFICIAL REMEDIES

Mercuric Oxycanide.—For a description see New and Nonofficial Remedies, 1921, p. 194. Mercuric Oxycyanide has been proposed as a substitute of mercuric chloride. Its antiseptic power is said to be greater and it is claimed to be less irritating than mercuric chloride because it does not act on albumin to the same extent. Representative syphilographers differ as to the use of mercuric oxycyanide intravenously. Some believe that its use should be limited to hospitals; others that it has no advantage over other and safer methods of administering mercury, while others consider it safe and valuable. But all are in accord that its safe use requires experience. Mercuric oxycyanide may be administered subcutaneously, intramuscularly or intravenously in the same doses as mercuric chloride.

Ampules Ven Sterile Solution Mercury Oxycyanide, 0.016 Gm.—Each ampule contains 5 Cc. solution, representing 0.016 Gm. mercuric oxycyanide, N. N. R. Intra Products Co., Denver, Colo. (*Jour. A. M. A.*, Sept. 10, 1921. p. 863).

Calcium Caseinate. — Calcii Caseinas. — Casein from cow's milk, rendered partially soluble by combination with calcium and containing not less than 1 per cent of calcium. The diarrheal diseases of infancy are now generally treated by dietetic measures. A useful food may be made from the curd of milk and diluted buttermilk, the resultant mixture containing a moderate amount of fat, a small amount of sugar and a large amount of protein (casein) and salts, particularly salts of calcium. A mixture of calcium caseinate and milk is also used. For children, calcium caseinate is mixed with milk and water or milk and gruel in the proportion of 10 Gm. calcium caseinate and one pint of the liquid and the mixture boiled. Calcium caseinate is a yellowish powder, free from rancid or sour odor. With warm water it forms a turbid suspension. Calcium caseinate must not contain more than 10 per cent of moisture, nor more than 2.5 per cent of fat and not less than 14 per cent of nitrogen.

Casec.—A brand of calcium caseinate, N. N. R. Mead Johnson and Co., Evansville, Ind.

Benzyl Succinate.—Benzylis Succinas.—The dibenzyl ester of succinic acid. Benzyl succinate lowers the tone of unstriped muscle, its action being similar to benzyl benzoate in this respect. It is superior to benzyl benzoate in being less irritating, less nauseating and in containing a greater proportion of benzyl radicle. Its use has been suggested in renal, biliary, uterine and intestinal colic, excessive intestinal peristalsis, dysmennorrhea, hiccough and other spasms of unstriped muscle. Its clinical use is still in the experimental stage. The dose is 0.3 to 1.0 Gm. Benzyl succinate is a crystalline, odorless and almost tasteless powder. It is almost soluble in water, but soluble in alcohol.

Tablets of Benzyl Succinate—H., W. and D.—Each contains benzyl succinate, N. N. R., 5 grains. Hynson, Westcott and Dunning, Baltimore (*Jour. A. M. A.*, Sept. 25, 1921, p. 1023).

The Abbott Laboratories:
  Procaine-Adrenalin Hypodermic Tablets No. 2.
Dry Milk Co.:
  Protolac.
Hynson, Westcott and Dunning:
  Tablets of Benzyl Succinate—H., W and D.
Intra Products Co.:
  Ampules Ven Sterile Solution Mercury Oxycyanide 0.008 Gm.

County Medical Societies

REPORTERS OF COUNTY SOCIETIES:

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Siebert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—Maude C. Exley, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan. M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—James M. Torrence, M.D., Indiana.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederick R. Bausch, M.D., Allentown.
Luzerne—C. L. Shafer, M.D., Kingston.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Mary A. Hipple, Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

October, 1922

COUNTY SOCIETY REPORTS

CHESTER—SEPTEMBER

The regular monthly meeting of the Chester County Medical Society was held at the Chester County Hospital on Tuesday, September 19th, with President W. W. Betts in the chair. On motion, the regular order of business was dispensed with and the President introduced the speaker of the occasion, Dr. Bruce McCreary, of the Department of Health of Pennsylvania, who favored the Society with a most interesting talk on the subject of "The Schick Test and Toxin-Antitoxin in the Control of Diphtheria."

Dr. McCreary first called attention to the fact that the Bureau of Vital Statistics had been making a special study of the circumstances attending the deaths from diphtheria reported throughout the state. For the past several years the number of cases reported have averaged about 18,000, with about 1,800 deaths. In 1920 the actual figures were: cases 16,555, deaths 1,783; in 1921, cases 15,860, deaths 1,480. It is believed that the figures for 1922 will show a still lower death rate and morbidity rate.

However, the outstanding feature of these statistics is the plain fact that, while the mortality from diphtheria has fallen from about 70% to 9% or 10% since the use of antitoxin, the morbidity rate, or number of cases of diphtheria reported, remains about the same from year to year. Close investigation of this matter has revealed the fact that *for every case of diphtheria reported there has been less than one person immunized*. This means, of course, that physicians have not immunized the contacts in the households.

A study of the deaths has shown that the average age has been 3½ years, thus substantiating the theory that the disease is one which attacks young children rather than adults. Several of the so-called deaths from diphtheria in older persons were proven to have been cases of Vincent's angina, streptococcic sore throat, or some other condition.

In 63% of the cases ending fatally *lost opportunities* were shown. There was an average delay of 4.7 days on the part of the families in calling a physician. The average time of delay in diagnosis after this was 2 days. In 10% of fatal cases *no antitoxin* was given. Seventeen per cent of the fatal cases were laryngeal diphtheria.

The value of the antitoxin in the treatment of diphtheria is shown very clearly by actual figures: Without the use of antitoxin 70% die. With the use of antitoxin 10% die. If antitoxin is administered in 36 hours 5% die. If antitoxin is administered in 24 hours 1% die. In other words, if antitoxin is given within 24 hours 99% get well.

The factors which govern the spread of diphtheria are: 1. Ignorance of the public as to the value of antitoxin as a cure and as a prophylactic measure. 2. Delay on the part of the physician in starting treatment. 3. Control of the "carrier" who spreads the disease.

The most valuable means at the disposal of the public at the present time for the determination of susceptibility to diphtheria is the Schick test, which is made by injecting under the skin of the individual a small quantity of the toxin of diphtheria. The amount is 1/50 the lethal dose that will kill a guinea pig weighing 240 grams in 4 days. At the same time a control injection of the same quantity of toxin which has been heated until it is inert is used. The reactions around the site of both injections are watched carefully, and if the individual is susceptible to diphtheria, there will appear a redness of the skin around the site of the injection of toxin. This redness will begin to fade after 24 to 36 hours, becoming bronze-like in color, and the surface of the skin in this area will desquamate. There is no general systemic reaction. The control reaction is usually a slight redness if the patient is susceptible to animal protein, which rapidly fades, and does not become bronze-like in color, and does not desquamate.

Where the Schick test has shown susceptibility of the individual to the disease, it has been found possible to produce a permanent immunity to the disease by the injection of toxin-antitoxin, which is a mixture of toxin and antitoxin, and which causes a steady increase of the antibodies in the individual. This is almost the same substance which is used to inject horses prior to the use of their serum for diphtheria antitoxin. The injection of the toxin-antitoxin differs from the ordinary antitoxin in that the effect is permanent; whereas in the case of the injection of the latter, the immunity to the disease is merely borrowed from the horse serum, and lasts but a few weeks at most.

The practical application of this form of immunization was carried out extensively in New York City by Drs. Park and Zinsser, who were able to show that the injection of toxin-antitoxin brought about 97% of permanent immunities.

Dr. McCreary then gave an outline of his own investigations of the diphtheria control of Adams County, Pa., which is a typically rural county, having few large towns. There were 1,100 children tested and 68% found susceptible to the disease. One thousand children were given immunizing doses of toxin-antitoxin. It is at present too early to determine the end results of this investigation, but one incident was recalled which emphasizes the value of the test: A family of a local minister was exposed to the disease by reason of a visitor from a neighboring town staying at the house. The girl who had the disease slept in the same bed with one of the minister's daughters who had recently been tested and found immune to diphtheria. Two or three of the other members of the household, who had also been tested, and found to be susceptible to the disease, but who had not been immunized were taken sick with diphtheria soon after the visitor left. The girl who had actually slept with the patient, however, failed to contract the disease.

Another incident, much more disturbing, was related where a child who had just been tested, contracted the disease and died within a short time. It was obvious, of course, that the disease was latent at the time of the test, but the antagonistic element in the town, particularly those of the ignorant class, made the most of it, claiming that the test had caused the child's death. The incident was given to show the importance of educating the public in the value of such measures before attempting tests on a large scale.

It has been found upon investigation that the susceptibility to the disease is much higher in the rural districts than in the large towns. This is most likely due to the fact that small children who live in the crowded districts, and who are exposed to the disease, die off quickly, and the survivors are those who are born with a marked immunity to the disease. It is also a fact that very young children are more susceptible to the disease and, more important, are less prostrated by doses of the toxin-antitoxin. The effort is being made to have the toxin-antitoxin administered to all infants of 6 months or older. After 6 months it is advisable to have the Schick test done first, in order to avoid the reaction in those who are already immune.

In conclusion, Dr. McCreary called attention to the fact that Dr. Scattergood, the local representative of the Department of Health, was very anxious to have Chester County immunized. To do this, it is necessary to educate the public as to the value of the Schick test and the immunization by toxin-antitoxin.

In the discussion of Dr. McCreary's talk Dr. Walter Webb, of West Chester, called attention to his experiences recently at the training camp at Camp Meade where 1,100 men were tested and 55% found susceptible. Of this 55% there were 9 virulent "carriers" discovered.

After a general discussion of the subject by several of the members of the profession and visitors present, a hearty vote of thanks of the Society was extended to Dr. McCreary for his excellent presentation of a most interesting problem.

Henry Pleasants, Jr., Reporter.

FRANKLIN—JULY-SEPTEMBER

The July meeting was held at the State Sanatorium at Mont Alto, on the 18th, as guests of Dr. R. H. McCutcheon, Superintendent, and the staff of the Sanatorium, and was presided over by the president, Dr. H. M. Miley.

The meeting was preceded by a dinner at 6 o'clock in the pavilion of the War Veterans' Hospital. Dr. E. C. Boddy gave a demonstration of artificial pneumothorax in a case. Dr. John B. McAlister, of Harrisburg, read a paper by invitation, on "Some Heart Conditions Frequently Met with in General Practice." He spoke of the many forms of heart disease, but considered the classification as outlined by Cabot of Boston. He said in part:

"If the general practitioner familiarizes himself with the classification of the diseases of the heart as given by Cabot, his task will be greatly simplified. It is a mistake to consider it proper to add 100 to the age of the individual as the normal blood pressure. When the systolic pressure is continuously above the maximum normal range, it is called hypertension. Prolonged hypertension will soon produce changes in the circulatory system, and while not a disease, it is a forerunner of severe trouble. We should remember that high blood pressure, a palpable thickening of the arteries, hypertrophy of the left ventrical of the heart, and accentuation of the aortic second sounds are pathogenic of arterial sclerosis. If everybody who has passed the age of 45 were examined at regular intervals, illness and deaths would be greatly reduced." He said also, "The prevention of diseases of the heart and circulatory system has only comparatively recently begun to claim its share of attention. Organic disease of the heart has shown an appreciable increase, so that to-day heart disease is one of the public health problems."

Dr. Tiplitz, of the Sanatorium faculty, read a paper on "Diagnosis and Treatment of Intestinal Tuberculosis." He stated that intestinal tuberculosis is one of the most serious complications of pulmonic phthisis and one that in the vast majority of cases forecasts a fatal outcome. An early diagnosis is a very difficult matter. In many cases one becomes suspicious of intestinal involvement when the patient is not as well in a general way as he was previously, though the symptoms referable to the lungs are stationary or improving. Examination of the abdomen shows tenderness. Nausea is an early symptom; also diarrhea, often after taking food. Probably the greatest help in the diagnosis is in the use of the x-ray examination with barium meal. In the treatment liquid diet is important; even abstinence from food for a while is of value. Sunlight treatment, in which the abdomen is exposed to the sun's rays, at first for five minutes and increasing five minutes each exposure from day to day, until exposure of two or three hours twice a day is made. Artificial light is to be used on sunless days. Surgery offers hope in selected cases.

Dr. O'Rear spoke of the value of these two papers to the general practitioner, and moved that the society ask the readers for a copy of each paper for its archives, so that each member so desiring may have the opportunity to read them. This was seconded and carried.

The papers were discussed by Dr. Amberson, of Waynesboro, and Dr. John Minehart, of Philadelphia. Dr. Minehart also spoke incidentally of the scarcity of physicians, especially in the country districts. He raised the query, "What will the rural districts do for medical attention in the next ten years from now? Apparently the country doctor is going out. It is a problem of to-morrow and must be worked out by the profession. That the telephone and auto will bring prompt medical attention is only part of the remedy."

The September meeting of the society was held in St. Thomas, eight miles west of Chambersburg, on the Lincoln Highway. The meeting was convened in the parlor of the Hotel National and was presided over by the president, Dr. H. M. Miley. Eighteen members and four visitors from Mont Alto Sanatorium were in attendance.

Dr. James H. Swan, St. Thomas, discussed "Abscess of the Lungs Following Pneumonia." The earliest symptom in the development of abscess is that the cases show unusual conditions, the patient presenting indications of a very sick individual. He described in detail the course of a case which recently occurred in his private practice. After earnest work and much patience the case came to full recovery.

Dr. Boddy spoke of a series of cases of this nature and referred to the importance of artificial pneumothorax. Dr. Tiplitz, of the Sanatorium, spoke of the danger of using artificial pneumothorax in the acute stage, stating that there is a possibility of the abscess rupturing into the pleural cavity. In chronic cases it is useful. Some of these cases recover spontaneously.

Dr. Wright spoke of the tendency to abscess of the lungs following certain forms of influenza.

Dr. Fairfax G. Wright, Chambersburg, discussed "Some Difficulties in Diagnosis of Strangulated Hernia." He said strangulated hernia has occurred less frequently in the past few years than formerly because earlier attention is given to hernia. He spoke of the various kinds and forms of hernia. Causes of strangulation in elderly persons are quite difficult of diagnosis or assurance of the form. Obstruction of the bowels, pain, with nausea and vomiting are sure signs. Dr. Amberson spoke of the danger in cases over 60 years of age, especially in the use of anesthesia. There are possibilities in the use of local anesthesia. He advises all young persons to be operated upon, in consideration of the increased danger after 60.

Dr. Shull moved that a vote of thanks be extended the speakers. This was seconded and carried.

The members and visitors were served with an excellent dinner of chicken, waffles, etc. The meeting was one of the best of the year and was enjoyed by all present. John J. Coffman, Reporter.

MONTGOMERY—SEPTEMBER

The regular meeting of the Montgomery County Medical Society was held at the State Hospital, September 6, 1922, with the following members present: McLaughlin, MacDonald, G. Lukens, Hunsberger, Heffner, Wilson, Sherborn, McKenzie, Wm. G. Miller, S. M. Miller, Kriebel, H. Seple, Kershner, Elmer, Beideman, Wolfe, Shearer, Gotwals, Hubley, P. Corson, Eisenberg, Atkinson, S. C. Seiple, P. Lukens, Simpson, Garner, Thomas, Parker and Buyers.

Dr. O. C. Heffner, who spent the summer seriously ill in a Philadelphia hospital, was called upon and gave an interesting talk on his experience in the hospital. He was loudly applauded and welcomed back to the society.

Dr. Clarke S. Long, of Lansdale, was granted a transfer from the Columbia County Society.

The meeting was then turned over to the staff of the State Hospital for the scientific program. Dr. S. M. Miller spoke upon "Shell Shock" and showed many cases of ex-soldiers suffering from various diseases who had been admitted to the hospital. Drs. Elliott, Wilson and Royce showed interesting mental cases. The discussion was continued by Drs. Thomas, Elmer and Buyers. John C. Simpson, M.D., Reporter.

WARREN—AUGUST-SEPTEMBER

On August 21st the members of our society met as guests of Dr. Chapman at the Elks' Parlors. Dr. George E. Bennett, of Cory, gave a very comprehensive review of the pathology and symptoms of fibroids —uterine myomata. He outlined the indications and contraindications for the use of radium, and by giving some case histories explained the advantages of surgical intervention. In the discussion which followed, emphasis was laid on the frequency with which this class of tumors is met and how often they cause but little inconvenience and require no treatment, and on the other hand how dangerous they may become and what good results follow their removal. Seventeen members were present.

The September meeting was in the nature of an outing. No business was transacted, but seventeen members journeyed in autos to Lake Chautauqua, a distance of 36 miles, and were entertained at Dr. Brown's summer cottage, which is located at Maple Springs on this lake. The day was ideal, and after indulging in an excellent dinner and gossiping a bit around the open fire, the members returned just a little happier for the trip and the relaxation it afforded.

M. V. Ball, Reporter.

STATE NEWS ITEMS

DEATHS

Dr. Frank Fisher, of Philadelphia, who was born in 1854 and graduated from Jefferson Medical College of Philadelphia in 1875, died September 5, 1922.

Dr. William H. L. Hale, of Philadelphia, died August 7th. He was born in 1860 and was graduated from Jefferson Medical College of Philadelphia in 1882.

Dr. Robert James Greer, who was graduated from the University of Pittsburgh School of Medicine in 1894, died at his home in New Kensington, July 31, 1922.

Dr. Geo. A. Cameron, of Philadelphia, died August 25, 1922. He was born in 1864 and was graduated from the University of Pennsylvania School of Medicine in 1887.

Dr. Alan L. Diefenderfer, of Slatington, died on August 8th. He was born in 1881 and was graduated from the University of Pennsylvania School of Medicine in 1908.

Dr. James Farrar Stone, of Philadelphia, born in 1839, died on August 15th. Dr. Stone was graduated from the Bellevue Hospital Medical College of New York in 1866.

Dr. Fred C. Chirinos, of Philadelphia, who was born in 1876, died August 5th. Dr. Chirinos was a graduate of Temple University Department of Medicine, Philadelphia, in the class of 1906.

Mrs. Lizzie D. Carrell, wife of Dr. John B. Carrell, of Hatboro, died at her home on the 23d of August. Mrs. Carrell had been in ill health for several years and for the past few months had been confined to her bed under the care of a nurse.

Dr. C. M. Brownell, 63 years old, died at his home in Stroudsburg, on September 20th, after a lingering illness. Dr. Brownell was a graduate of Hahnemann Medical College, Philadelphia, in the class of 1883. He was a hunter and fisherman and a great lover of outdoor sports.

Dr. Nathaniel R. Perkins, father of Dr. R. L. Perkins, of Harrisburg, died on September 22d, at his home in Dorchester, Mass. Dr. Perkins was a prominent resident of Massachusetts and a descendant of John Perkins, the first representative of the family, who came from Bristol, England, on the ship Lyon, landing at Nantucket, February 5, 1631.

Dr. Alice H. B. Milligan, a graduate of the class of 1912 of the Woman's Medical College of Pennsylvania, died in the Woman's Hospital of Philadelphia, September 4th, of heart disease. Dr. Milligan was physician for some years at the M. E. Deaconess's Home, Philadelphia, and was also an assistant school medical inspector in the public schools of Philadelphia.

Dr. Joseph E. Rhoads, son of Joseph E. Rhoads, Sr., and Louisa Sheesely Rhoads, died at his home in Harrisburg, on September 9th, aged 44 years. Dr. Rhoads was educated in the Harrisburg schools and graduated from the Medical Department of the University of Pennsylvania. He served as intern in the Children's Hospital and later spent two years abroad, one year in the Ophthalmological Hospital of London and one year in the Eye Clinics of Vienna. After returning from abroad he practiced in Philadelphia, and was for ten years instructor in diseases of the eye at the University of Pennsylvania. Two years ago he moved to Harrisburg. He was a member of the Dauphin County Medical Society, the State Society and the American Medical Association. He was also a member of the Racquet Club of Philadelphia and of the Pine Valley Golf Club of Philadelphia. He is survived by his mother, two brothers, Ross Rhoads, of Harrisburg, and Charles Rhoads, of Lancaster, and one sister, Miss S. Grace Rhoads, of Harrisburg.

Dr. William Sill Foster, one of the most prominent members of the Allegheny County Medical Society, and the dean of the medical profession in Pittsburgh, passed away Sunday, September 17, 1922, at his home in Pittsburgh. Dr. Foster was born in 1842 and enlisted in the Civil War while a student at Washington and Jefferson College. He served with the First Pennsylvania Cavalry, and was later active with the Pennsylvania State Militia. During the Spanish-American War he saw home service, and during the World War he was a member of the Medical Reserve Corps.

Soon after his graduation at Jefferson Medical College, Philadelphia, in 1866, he located in Pittsburgh. He was President of the Allegheny County Medical Society in 1890, and of the State Society in 1895. He was also vice-president of the American Medical Association in 1907, and for a number of years was a delegate to that body from Pennsylvania.

Dr. Foster was married twice. His first wife, Amanda Watt, died in 1892. From this union were born five children, of whom only one, Dr. Bayard D. Foster, is living. His second wife was Mrs. Harriette D. Huston, whose son, John Robley Dunglison Huston, is a Pittsburgh attorney.

MARRIAGES

Dr. George F. Gracey, of Harrisburg, and Miss Jean Smith, of Gordon, were united in marriage on September 23d, at the home of the bride in Gordon.

Miss Bess Botkin, daughter of Dr. and Mrs. L. H. Botkin, of Duquesne, was married at her home, September 20th, to Dr. Glenn Dunmire, of Duquesne.

Dr. D. Hartin Boyd, of Pittsburgh, and Miss Janet Pressly Mabon, daughter of Mrs. John H. Mabon, were united in marriage September 23d, at Pittsburgh.

Miss Rosina Moorhead LaRoss, daughter of Dr. William A. LaRoss, of McDonald, was married at the First Presbyterian church at McDonald, September 18th, to Lieut. Mathison James Montgomery, Medical Corps, United States Navy. After a month in the Adirondacks, Lieut. and Mrs. Montgomery will make their home in New York.

ITEMS

Born recently to Dr. and Mrs. Walter F. Donaldson, of Pittsburgh, a daughter.

Dr. W. N. Keylor, of Mechanicsburg, is a candidate for the State Legislature on the Coalition Party ticket.

Dr. Clarence R. Phillips, of Harrisburg, who recently sustained a fracture of the leg, is recovering nicely.

Dr. and Mrs. Henry Lovett, Langhorne, spent the latter part of August on a motor trip through the New England States.

Dr. Sterling King, son of Dr. W. L. King, of Muncy, is serving his internship at the Samaritan Hospital, Philadelphia.

Dr. Henry B. Davis and family, of Lancaster, recently toured Canada and are reported to have had a most delightful time.

Dr. J. Gibson Logue, of Williamsport, spent the month of August in New York City, where he took a postgraduate course in diseases of children.

Dr. and Mrs. H. G. McCormick, of Williamsport, recently returned from a motor trip to Boston, where they visited their daughter, Mrs. Karl Mosser.

Dr. Lewis A. Saltzman, of Philadelphia, special investigator in the prosecution of chiropractors, plead guilty to extortion in Criminal Court at Norristown on September 20th.

Dr. Herman Flock, who has been interne at the Williamsport Hospital for the past year, has gone to New York, where he will take a special course in Diseases of the Eye, Ear, Nose and Throat.

At a dinner given by Mr. and Mrs. Edwin Price, of Ashland, in the Fountain Springs Country Club, the engagement of their daughter, Miss Kathryn Price, to Dr. Robert M. Biddle, of the staff of the State Hospital at Fountain Springs, was announced.

Cyrus B. Follmer, son of Dr. W. H. Follmer, Williamsport, arrived home, August 23d, for a two months' vacation. Mr. Follmer has been in France for two years in the consular service, and on July 12th, of this year, he was made Vice Consul at Lyons, France.

Dr. and Mrs. Francis X. Dercum and their daughter, Miss Mary de H. Dercum, of Philadelphia, who have been abroad since the early summer, returned recently to this country. Their other daughter, Miss Elizabeth Dercum, who also accompanied them, has gone to Italy and will return about the middle of November.

On September 13th the Annual Meeting of the Central Pennsylvania Medical Association was held in Hotel Penn-Alto, Altoona. Dr. John Deaver, of Philadelphia, gave an address on "The Relationship of Appendicitis to Upper Abdominal Diseases"; and Dr. Harvey G. Beck, Professor of Medicine in the University of Maryland, gave an illustrated lantern talk on "Hypophyseal Syndromes." A most interesting meeting was reported.

GENERAL NEWS ITEMS

The Annual Roll Call of the American Red Cross, in which its membership is renewed from year to year, will take place in the period between Armistice Day, November 11th, and Thanksgiving Day. This is the only appeal that the National Organization makes during the year, and is for the purpose of maintaining its membership at such a point as will enable it to perform those duties which are placed upon it by Congress.

The Eastern Homeopathic Medical Association will hold its convention in Trenton, N. J., at the Stacey-Trent Hotel, October 25-27, 1922. There are many members of county societies in this state who are graduates of the Homeopathic School, and this convention is of great interest to many who are situated in the eastern part of the state and who no doubt will take advantage of the opportunity to attend this convention.

The thirty-second annual session of the New York and New England Association of Railway Surgeons will be held in the Colonial Room, on the third floor, of the Hotel McAlpin, New York City, on Saturday, October 28, 1922, under the presidency of Dr. Donald Guthrie, of Sayre. A very interesting and attractive program is being arranged for this session. Plans are under way to make this the biggest and most successful session ever held by this Association.

A new enterprise has been started by the Hospital Buyer Company, Inc., of Chicago, for the benefit of physicians and hospitals. They issue a pamphlet, the first number of which has already appeared and which contains many valuable suggestions in regard to the purchase of supplies. This pamphlet affords many interesting illustrations of the advantage of having at hand a work which will in a brief way call the attention of the profession to the many things that are needed every day in the work of the doctor and the hospital.

The Executive Committee of the Good Health Week Promotion Bureau has designated the week of October 23-30 as Good Health Week. This movement is being fostered by leading manufacturers who realize the public good that may be accomplished through stimulation of the layman's interest in that portion of public health work in which he may do his part. The Committee desires the coöperation of the medical profession in telling the nation, and particularly that portion which comes under the jurisdiction of the state, the advantages of observing the advice given regarding ventilation, sanitation, personal hygiene, etc. The Department of Labor at Washington has sanctioned this campaign and the Commissioner, Hon. James A. Davis, has issued a letter of commendation in regard to the work of the Bureau.

The New York State Department of Health has for some time been broadcasting "Radio Health Hints." These are released Saturdays and have assumed considerable importance in the instruction of the public on various subjects. On Saturday, September 23d, the twenty-seventh of a series of five-minute health talks, which was broadcasted the previous Friday evening from the Radio Station WGY Schenectady, illustrates the extent of the work done by the New York State Department of Health. Among the subjects discussed are the following: Radio Health Hints; Scarlet Fever; Infant Death Rate Declines in Buffalo; Vacation Contagious Diseases Lead to School Epidemics; Preventing Fatalities from Children's Diseases; The Common Drinking Cup; Household Insects and Their Extermination; Poisonous Plants; and Getting Rid of Mosquitoes.

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION

The second meeting of the Medical Women's International Association was held at Geneva, Switzerland, from the fourth to the seventh of September, 1922. Interesting reports were read by medical women from different countries, and the constitution of the organization revised in accordance with the provisions under which it was adopted. Clinics in the different European cities were visited en route.

NEW YORK AND NEW ENGLAND ASSOCIATION OF RAILWAY SURGEONS

The thirty-second annual session of this Association will be held in the Colonial Room, on the third floor, of the Hotel McAlpin, New York City, on Saturday, October 28, 1922, under the presidency of Dr. Donald Guthrie, of Sayre, Pennsylvania. A very interesting and attractive program is being arranged for this session. Plans are under way to make this the biggest and most successful session ever held by this Association.

BOOKS RECEIVED

Clinical Diagnosis; Case Examination and the Analysis of Symptoms, by Alfred Martinet, M.D., Paris, France, with the collaboration of Drs. Desfosses, G. Laurens, Léon Meunier, Lutier, Saint-Cène, and Terson. Authorized English translation from the third, revised and enlarged edition, by Louis T. de M. Sajous, B.S., M.D., Philadelphia. Cloth, 1,388 pages, with 895 text engravings and several full-page color plates. Complete in two royal octavo volumes. Vol. I, *Physical and Laboratory Diagnosis.* Vol. II, *Analysis of Symptoms.* Philadelphia: F. A. Davis Company, Publishers, 1922. Price 2 volumes, $14.00.

Endocrine Glands and the Sympathetic System, by P. Lereboullett: P. Harvier: H. Carrion; A. G. Guillaume. Translated by F. Raoul Mason, M.D., Instructor in Pediatrics New York Postgraduate Medical School and Hospital, etc., with the collaboration of Daniel R. Ayres, A.B., M.D., Assistant Professor of Gynecology New York Postgraduate Medical School and Hospital, etc. Philadelphia and London: J. B. Lippincott Company.

Diseases of the Thyroid Gland, by Arthur E. Hertzler, M.D., F.A.C.S., Professor of Surgery in the University of Kansas School of Medicine; Surgeon to the Halstead Hospital, Halstead, Kansas; Surgeon to St. Luke's Hospital and St. Mary's Hospital, Kansas City, Mo., etc., with a chapter on Hospital Management of Goiter Patients by Victor E. Chesky, A.B., M.D., Associate Surgeon to Halstead Hospital. One hundred six original illustrations. St. Louis: C. V. Mosby Company, 1922. Price, $5.00.

General Medicine, Volume I, The Practical Medicine Series, 1922. Chicago: The Year Book Publishers. Price, $3.00.

Diseases of the Stomach and Upper Alimentary Tract, by Anthony Bassler, M.D., F.A.C.P., Professor of Gastro-Enterology, New York Polyclinic Medical School and Hospital and the late Fordham University Medical College; Visiting Physician, New York Polyclinic Hospital; Visiting Gastro-enterologist, Peoples and Christs Hospitals, and Consulting Gastro-enterologist Stuyvesant Polyclinic and Beth-David Hospitals, etc. Fifth edition, revised and enlarged. Cloth, 977 pages, illustrated with 151 half-tone and line text engravings and 93 full-page plates (with 164 figures), plain and in colors, from original photographs and drawings. Philadelphia: F. A. Davis Company, Publishers, 1922. Price, $8.00.

The Surgical Clinics of North America, June, 1922, Chicago Number. Volume 2, No. 3. Philadelphia and London: W. B. Saunders Company.

Diseases of Infancy and Childhood; Their Dietetic, Hygienic and Medical Treatment. A textbook designed for practitioners and students in medicine. By Louis Fischer, M.D., Attending Physician to the Willard Parker and Riverside Hospitals of New York City; Physician in Charge of the Infantorium; Former Instructor of Diseases of Children at the New York Postgraduate Medical School and Hospital, etc. Ninth revised edition. Volume I, *Infant Feeding and Organic Diseases.* Cloth, 603 pages, with 146 text illustrations, several in colors, and 37 full-page half-tone and color plates. Volume II, *Infectious Diseases —Cerebral—Orthopedic and Eye, Ear, Skin, Etc.* Cloth, 548 pages, with 147 text illustrations, several in colors, and 43 full-page half-tone and color plates. Philadelphia: F. A. Davis Company, Publishers, 1922. Price 2 volumes, $12.00.

Mortality Statistics 1920, Twenty-first Annual Report of Department of Commerce, Bureau of the Census, W. M. Steuart, Director. Washington: Government Printing Office, 1922.

Hughes' Practice of Medicine, including a section on mental diseases and one on diseases of the skin. Twelfth edition. By R. J. E. Scott, M.A., B.C.L., M.D., Fellow of the New York Academy of Medicine. With 63 illustrations. P. Blakiston's Son & Co., Publishers, 1012 Walnut St., Philadelphia, Pa. Price $4.00.

Obstetrics for Nurses. By Joseph B. DeLee, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (6th) Edition, entirely reset. 12mo of 525 pages, with 245 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $3.00 net.

The Surgical Clinics of North America (Boston Number, August, 1922) Volume 2, No. 4. (Issued serially, one number every other month.) Per clinic year (February, 1922, to December, 1922), paper, $12.00 net; cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company.

Diseases of the Skin. By Henry H. Hazen, A.B., M.D., Professor of Dermatology in the Medical Department of Georgetown University; Professor of Dermatology in the Medical Department of Howard University, etc. Second edition, 241 illustrations, including two color plates. St. Louis: C. V. Mosby Company, 1922. Price $7.50.

Principles and Practice of X-Ray Technic for Diagnosis. By John A. Metzger, M.D., Roentgenologist to the School for Graduates of Medicine, Medical Department, University of California, Southern Division, Los Angeles. With 61 illustrations. St. Louis: The C. V. Mosby Company, 1922. Price $2.75.

BOOK REVIEWS

COLLECTED PAPERS OF THE MAYO CLINIC.
Vol. XII, 1920, Published September, 1921.

Someone has said that "the only trouble with the dictionary is that it changes the subject so often," and this applies with equal force to a review of this volume. In fact, it is quite impossible to review, in the ordinary sense, such a collection of papers. A vast number of subjects are dealt with, each one by those well qualified to do so. There is interest for everyone, no matter what specialty the reader may be identified with. The Mayo Clinic primarily stands forth as a surgical clinic, but those of us who have been fortunate enough to visit there know that other phases of medicine are done equally as well, even though we admit that surgery is done preëminently well.

Experience counts for a great deal, as everyone knows, and we have come to look to the Mayo Clinic for the results of their experience in every line of medical work. The large numbers dealt with there make this experience doubly valuable. Perhaps, then, the best feature of these "Collected Papers," as in the volumes which have preceded this one, is the yearly report that is thus made of the experience of the Mayo Clinic with new operative procedures and most questions of the day concerning diseases in general. This collection of papers, therefore, appearing in a volume each year is a valuable asset to our current literature and is a convenient way of preserving these papers many of which have been read, of course, as they appeared in current medical periodicals.

J. S. R.

THE EIGHTEENTH AMENDMENT AND THE PART PLAYED BY ORGANIZED MEDICINE.
By Charles Tabor Stout. Published by Mitchell Kennerley, New York.

The book is written by one who, despite his published pedigree, is decidedly "moist" in his attitude toward the liquor problem. His statement that "there is but one excuse for prohibition, and that is ignorance," is a direct reflection on the mentality of a majority of the voting citizens of the United States. There is a studied attempt on the part of the writer to attack and discount all of the moral forces that have been active in bringing prohibition to pass. Many of the arguments advanced are specious.

A complete reading of the book convinces one that the writer has not made out a good case against the Eighteenth Amendment. A. C. M.

THE GLANDS REGULATING PERSONALITY.
By Louis Berman, M.D., Associate in Biologic Chemistry, Columbia University; Physician to the Special Health Clinic, Lenox Hill Hospital. New York: The Macmillan Company, 1921, 300 pp.

Endocrinology, a recent offspring of physiology, is undoubtedly a very interesting and important study. But it is new, and like many new things, has scarcely found its place in the congress of medical sciences. It seems inclined to show bad manners, strutting in and attempting to seat itself in the high places, and outside is found consorting with commerce and with quacks. Before it can be accepted at its own valuation of itself, it must show itself to be descended from worthy stock and be welcomed in the best society.

In this the present volume does not help. In it, endocrinology, in the guise of the most offensive type of *parvenu*, seeks to take precedence over all of our well-tried friends, and lays claim to a multitude of unexpected things.

Who would have supposed that "Internal Secretions" could claim to be the source of organic evolution; to explain the workings of the soul; to explain personality; to elucidate the problems of penology, and to promise for future generations greater perfection of body and fertility of mind?

Yet all this and more the writer does in an interesting manner, and with the convincing logic and diction of Henry George or Carl Marx, and with the imagination of H. Rider Haggard.

We believe that the book is well worth reading. It is not a textbook; it is not in the strict sense a medical book. It is difficult to determine for just what class of readers the author intended it. It is a philosophy—the philosophy of the internal secretions. It is wonderfully interesting, and so far as the author confines himself to facts is a good guide to a study of their important effects. But imagination plays a great part in it, and though no doubt the author's vision is in the main clear and distinct, he attempts to focus upon heights and breadths that are beyond his reach.

As samples of the thought and diction, we offer the following extracts which illustrate the verve of the writing:

"Is man, then, never to be the architect of his own destiny? Are we to surrender our faith in the future of our kind to the spectacle of a miserable species sentenced by its own nature to self-destruction? We thought to rise upon the wings of knowledge and beauty, lured by the mysteries of color and the magic of design and the might of the intellect and its words, that have transfigured life into the greatest adventure ever attempted in time and space. But we find ourselves merely another experiment, intricate and rather long drawn-out, to be sure, with marvelous pyrotechnics, magnificent effects here and there but bound to eliminate itself in the end, to make stuff for the real conqueror of the stars yet to come. We are condemned to be classed with the dodo and the mammoth by the coming discoverer of an escape from the slave and careerist. And so let us resign ourselves to fate."

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"But what about the poor human soul itself, with its inherent vices and virtues, its fears and indulgences, audacities and nobilities, jealousies, shames, blunders, incurable likes, cravings and diseases? Can science change the texture of the slave and careerist, if they represent the subnormal and the abnormal? What about the Becky Sharps, the Mark Tapleys and Tom Pinchs, not to speak of the Nicholas Nicklebys and the Hamlets, the Micawbers and the Falstaffs? What future have they as they recur in the generations? Indeed does not the very fact of their recurrence, of them and of the hundreds of other types and temperaments, point implacably to the conclusion to which the historian, the philosopher and the biologist have driven us: that in the grip of an endless chain of pasts the human soul has no future?

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" * * * the thyroid played a fundamental part in the change of sea creatures into land animals. Experimentally, thyroid has been used to transform one into the other. Thus, the occasional change of a Mexican axolotl, a purely aquatic newt breathing through gills, into the amblystoma, a terrestrial salamander, with spotted skin, breathing by means of lungs, has long been known."

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"* * * A variation of the thyroid in the direction of increased secretion was probably responsible for the first land animals."

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"How subtly the internal secretion affects every phase and aspect of child as well as adult, by doing something to the speed of activities in their cells is told straightway by the effects of it when eaten or introduced into the skin or blood of various people. A cretin, idiotic, dwarfish, deformed, hopeless, an incessantly prodding burden of sorrow to the mother, who looks upon the masterpiece she had labored to bring forth, and beholds a terrible gargoyle, becomes transformed when fed thyroid.

"In a few days the cretin will get warmer, and require much less wrapping and bed clothing. With the improvement in circulation, the color becomes better and the extremities lose their coldness. In a week or so, irritability and resentment at disturbance appear. He will begin to recognize and know his parents, smile and play. There is a gradual return to normal of the facial appearance, and resumption of growth. All kinds of marvelous growth effects occur. Twenty teeth may be cut in six months. Coarse, rough, dry, shaggy hair becomes fine, silken, long and curly. The skin becomes soft, moist and roseate. Inches in height may be added every month. Bright, active, even talkative, are the descriptive terms an observer would apply after a few months. A complete remaking of body and soul is apparently effected.

Yet, should the administration of the thyroid cease, an almost immediate reversal to the original vegetative condition is inevitable. After a few days reactiveness slows down, the child will speak only when spoken to, will sit quietly in a chair all day and act semi-anesthetized. Gradually hair and skin return to the previous cold-blooded animal state, and the whole picture of the cretin is in full bloom. Supplying the internal secretion of the gland promptly repeats the transformation.

"One wonders what is to be the ultimate fate of these reformed cretins. Since the tale of the opening of life to them, once considered hopeless idiots, is scarce a generation old, we have no data, as yet, as to the character of their children, their adventures and vicissitudes, in short, their life history. Those of whom we have any record are normal and healthy school children or workers, alive to the interests of childhood or their occupation and social circles. No one outside their family knows that they are cretins, and the most acute observer would be hard put to it to suspect. What a theme for the reflections upon appearances the eminent Victorians loved!

"There are possibilities the imagination may envisage. One may suppose such a cretin, with all his other ductless glands intact, grown successfully to manhood under careful medical guidance. No one but himself is aware of his affliction, outside of his medical advisers. Luck aids him to rise in the world, or, perhaps he has been born with a spoon of the precious metals in his mouth. Adolescence, love and marriage dance their sequence. Our hero, of course, keeps the dread secret to himself. Whether such an omission of confidence would entitle his wife to divorce is something the courts will be called to decide sooner or later. But without anticipating, the honeymoon involves a trip to the South Seas. A storm and a wreck throw them alone on an island, tropical, easy to live on, and rescue in the course of a few months certain. The man, to his horror, discovers that he has saved of his medicaments only a pill box containing half a dozen thyroid tablets, his requirement being one a day. Finally they are all gone. He feels his faculties slipping hour by hour. Shall he tell her? Indecision grips him, and he delays until the day when his consciousness sinks to the point where it no longer grasps his problem. The wife must endure the spectacle of the enchantment of her husband, and his change from gallant lover to dull animal ogre. A new version of Beauty and the Beast!"

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"As the personality develops, the vegetative system becomes susceptible to the manifold associations of family, school, church and society, art, science and religion, and last, but not least, sex. All the different nuances of personality are expressions of a particular relationship, transitory or permanent, between the endocrines and the viscera and muscles. Conversely, behaviour shows what a person actually is chemically; that is, what endocrine and vegetative factors predominate in his make-up."

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"We think and feel not alone with the brain, but with our muscles, our viscera, our vegetative nerves, and last but not least, our endocrine organs. In short, we think and feel with each and every part of ourselves."

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"The riddle of personality! Are we at last upon the track of its uncovering? That elusive mystery, which philosophers have wrapped in the thousand veils of Greek and Latin words, and psychologists, even unto the third and fourth generation of Freudians, have floundered about in, moles before a dazzling sun, is it to be unwound for our inspection! Think of the human soul. What an invisible, intangible chameleon is its true reality! Watch it and you see something that seems to uncurl and expand like a feather with exultation, delight and joy, to contract and stiffen into a billiard ball with fear and pride, shrewd caution and vigilant malevolence, to rear back and spark fire like lightning, with anger and temper, and to crawl and slither with abjection and smirking slyness, when it needs to. This multiplex Thing-Behind-Life, are we really about to dissect it into its elements?"

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"The medieval scholiasts, who fought as fiercely about names as nations about territories, divided men into the sanguine, the bilious, the lymphatic and the nervous. It was a pretty crude classification of the different constitutions. The endocrine criteria, more exact and concrete, divide them into the adrenal centered, the thyroid centered, the thymus centered, the pituitary centered, the gonad centered, and their combinations."

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"The rise and fall of Napoleon followed the rise and fall of his pituitary gland."

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"The specific quality of the Nietzsche genius also directs attention to a pituitocentric in whom both antepituitary and postpituitary are extraordinarily well-functioning, but are in a state of unbalance in which the postpituitary gets the upper hand."

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"Charles Darwin * * * lived the life of one with hyperfunctioning pituitary, the anterior portion dominating the posterior, a thyroid excess, and an adrenal much deficient, the combination settling the fate of a grand intellect in an invalid."

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"Cæsar was not the kind of great man that Darwin was, and only a rather muddled careerist, because he had too much adrenal and postpituitary. But he was a pituitocentric of a certain type."

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In regard to Florence Nightingale, from an analysis of available biographical and portratural data, he concludes as follows:

"The official biography by Sir Edward Cook contains three portraits, representing three different stages, which bear out the pituitocentric thesis of her personality and family history. One, as she was at 25, and pictured by Mrs. Gaskill: 'She is tall; very straight and willowy in figure; thick and shortish rich brown hair; very delicate complexion—perfect teeth—perfect grace and lovely—she is so like a saint.' The face is long and oval, of the postpituitary kind. Then gradually the antepituitary gained an ascendency in the concert of her internal secretions, so coloring her life with its masculine tints, and altering her face as well as her disposition. The photograph of her taken when she was 38 shows a quadrangular outline, and all the acridity that impressed Strachey. The last picture of her, a water-color made in 1907, shows a round-visaged old dame who might be the peasant grandmother of two dozen descendants. Little patches of red over the cheek bones remind one of myxedema, and indicate that towards the very end of her life, her thyroid failed her as well as her pituitary. So that our biographer relates: 'Then the Royal Command, the Order of Merit was brought to South Street, and there was a little ceremony of presentation. Sir Douglas Dawson, after a short speech, stepped forward and handed the order of the insignia to Miss Nightingale. Propped up by pillows, she dimly recognized that some compliment was being paid her. "Too kind—too kind!" she murmured; and she was not ironical.' In the days of pituitary and thyroid hyperfunction we may be sure she would have been caustically and penetratingly ironical."

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His treatment of the personality of Oscar Wilde concludes with the opinion:

"All in all, there can be no doubt that Oscar Wilde was a case of status lymphaticus, the technical name for the thymus-centered personality."

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But the author is not a pessimist; he does not leave us "up in the air." No, he is rather optimistic and conceives that there may be great hope of the future. See the closing paragraph:

"The internal secretions are the most hopeful and promising of the reagents for control yet come upon by the human mind. They open up limitless prospects for the improvement of the race. A few hundreds of investigators are engaged upon their study throughout the world. That is one of the ironies of our contemporary civilization. A concerted effort at the task of understanding them, backed by the labors of tens of thousands of workers, would, without a doubt, accomplish as much for humanity as the vast armies and navies that consume the substance of mankind. If we could not obtain Utopia then, we might, at least by abolishing the subnormals and abnormals who constitute the slaves and careerists of society, render the human race less contemptible and more divine."

J. McF.

THE NEWER KNOWLEDGE OF NUTRITION; THE USE OF FOOD FOR THE PRESERVATION OF VITALITY AND HEALTH. By E. V. McCollum, Ph.D., Sc.D. Second edition, entirely rewritten. New York: The Macmillan Company, 1922.

The first edition of this work, published in 1919, was in reality but a preliminary announcement of what was to follow. It scarcely hinted at the magnitude of the present publication. This work marks an epoch in the development of the knowledge of nutrition. The publication of Chittenden's "Physiological Economy in Nutrition" in 1904 emphatically called attention to the fact that the problems of nutrition must be studied *de novo,* that the fads, fashions, exigencies, or religious canons of various peoples, rather than reason, had hitherto determined the diets of man.

The work of Lusk, "The Science of Nutrition," first edition in 1906, and formally closed by the third edition in 1917, will ever remain one of the masterpieces of medical literature, as attractive in form as it is valuable in substance.

It was necessary for physiology, histology, pathology, biochemistry, bacteriology, and cognate subjects to make wide and solid advances before the subject which is most important to the human race, nutrition, could be studied scientifically. It may not be long now before the whole subject of nutrition may be rewritten, as Lusk prophesied, "from the standpoint of physical chemistry."

The present excellent work of McCollum's is the story of the evolution of the newer knowledge of nutrition. It is an effort to clarify and to make practical applications of the recent advances in the science of feeding. The transition from the chemical to the biological method is clearly described. The biological method had been foreshadowed in Chittenden's work, also in the very able work of Atwater. It was more practically developed in the work of Hopkins of Cambridge (Eng.) in 1906, but the far-reaching significance of Hopkins' work was not understood or appreciated until much later.

McCollum gives exhaustive though epitomized descriptions of each step in the development of this biological method, and a large part of the present volume is essentially a ready reference book for the student of nutrition. Consequently it contains much matter that has only an academic interest for the practitioner of medicine.

The development of the author's rat colony in 1915 and the reasons for the same, with the practical results that have been obtained, form one of the most interesting chapters in the history of medical research. It is well worthy of a volume by itself. The development of the idea of "optimal" diet as contrasted to "normal" diet; the supplemental value of proteins from different vegetable sources; the importance of "mineral foods" in proper proportion; the function of "the protective foods"—milk, raw salads, and the leafy vegetables; the specific properties of the vitamines A. and B. and, with the aid of the guinea pigs, C., and the probable existence of a fourth, D., essential to the prevention of rickets; the relation of diet to dental caries, and to mental and moral attributes, or at least the effect of diet on instincts, which in human beings are usually given moral significance; these are some of the stories of the rat colony that are as interesting as any romance.

The author most convincingly defends the thesis that the regulation of the diet is to be the most important measure in the preventive medicine of the future.

One of the most important and practical subjects elaborated in this book is the truth about condensed, powdered, pasteurized, and modified milk. I quote from page 318: "There can be no question that the modern practice of modifying milk for infant feeding represents one of the most gigantic and tragic examples of persistent blundering of which civilized man *is* guilty." The fact that one of the most recent publications on the care of the child, *The Healthy Baby*, shows no recognition of these truths, demonstrates how timely is the publication of McCollum's work. In view of the radical, even revolutionary, character of his statements on this subject, it is rather to be desired that more specific directions for the avoidance of the evils of artificial feeding had been given in this chapter particularly as to mineral deficiencies.

No medical subject has been so handicapped by worthless tradition as the subject of dietetics. Edition after edition of so-called "manuals" have appeared with scarcely anything in them to justify their existence. Diets without a semblance of reason in their composition are given for all imaginable conditions and the only recognized essentials of the babies' bottle are protein, fat, carbohydrate, and calories!

The fact that the epoch-making work of the author, and of others reported in this book, could never have been accomplished without the use of animal experimentation forms another irrefutable argument against the misguided and fanatical antis who are just now actively engaged in fomenting trouble in Colorado, Louisiana, Florida, Idaho, Oregon, Washington and California, and who must be reckoned with sooner or later and from time to time in all our state legislatures. The last two chapters, "The Dietary Habits of Man in Several Parts of the World" and "The Most Fundamental Problem in Preventive Dentistry," are particularly well written, entertaining, instructive, and convincing.

The book is well made, typographical errors are conspicuous by their absence, the illustrations are well chosen and helpful, and a carefully prepared index adds greatly to the value of the work. L. L.

RINGWORM AND ITS SUCCESSFUL TREATMENT. By John P. Turner, M.D., Medical Inspector of Public Schools, Philadelphia. Cloth. Price $1.00. F. A. Davis Co., Philadelphia, publishers, 1921.

The book consists of sixty-two pages with eight illustrations, and the treatment suggested has proven remarkably efficacious according to an introduction written by Dr. Walter S. Cornell, the Director of Medical Inspection of Public Schools in Philadelphia. The work was originally undertaken in 1913 on account of eighty-three cases of ringworm occurring in one of the public schools under his care, a complete cure being obtained in all cases. Since then the author has obtained success with "thousands of cases that have come under his care." The plan of treatment may be stated as follows: In severe cases cut all the hair close, in an isolated patch cut the hair close for the radius of an inch. The treatment consists of four stages. First stage daily for four days, scrub patch with castile soap and warm water, and apply tincture of iodin. Second stage, daily for three days, follow the scrubbing and rub in oil of cade. Third stage, for three days, apply by rubbing into the parts 20% ammoniated mercury ointment. Fourth stage, follow the scrubbing, and rub into the parts resorcin ointment, 20%. Continue the treatment by going through the same routine if necessary. F. C. H.

PEDIATRICS, ORTHOPEDIC SURGERY. PRACTICAL MEDICINE SERIES. 1921, Vol. IV. Chicago: The Year Book Publishers.

This volume is one of a series issued at about monthly intervals, beginning in May, and covering the entire field of medicine. Each volume is claimed by the publishers to be complete on the subject of which it treats. The series is published primarily for the general practitioner.

The subjects are well abstracted and carefully edited. It will give the general practitioner, as well as the pediatrist, an opportunity to cover the pediatric and orthopedic field with the minimum of reading.

H. J. C.

EYESIGHT CONSERVATION BULLETIN NO. 1. Issued by the Eyesight Conservation Council of America, Times Building, New York City.

This bulletin, the first tangible compilation of facts, concerning "Industrial Vision and its Conservation," investigated and studied on a large scale, is well worth the time spent in reading its thirty-two pages. The chapter on "The Correction of Substandard Vision" should be read by every physician, even though not particularly interested in industrial ophthalmology, as following a careful examination it has been shown that more than 50% of the working people have defective vision, requiring correction. The facts as shown are of vital importance to every employer and employee. Other chapters deal with "Protective Methods and Devices" and "Illumination," subjects which are so necessary to consider when keen competition requires the maximum of efficiency. The bulletin may be procured by sending twenty-five cents, which helps to defray cost of publication and distribution, to The Eyesight Conservation Council of America, Times Building, New York City. G. H. C.

THE THYROID GLAND. Clinics of George W. Crile and Associates.

The book is complete in every way and covers every phase of the important subject. The chapters by Drs. Dinsmore, D'Houbler, Nichols, and Christie thoroughly cover the various aids to diagnosis of toxic goiter. The various articles by Dr. Crile are complete to the minutest detail. The use of nitrous oxid and oxygen analgesia, operative technic and postoperative complications are ably covered. The book is a very valuable contribution to the subject of goiter.

G. W. Hawk.

PITFALLS. By A. J. Caffrey. From the Press of Richard Bager, of Boston.

The author of this little book has gathered his material from a period of more than twenty years of work in the practice of medicine. He has divided it up into chapters, each of which is a story of its own, told in plain, simple words, and emphasizes the fact that there are many pitfalls before us and we should "stop, look and listen" before we use the knife. He admonishes the reader to take lots of time, to read all the lines and to bridge himself well before making a positive diagnosis, which will in most cases eliminate the pitfalls. The men of both medicine and surgery are sometimes carried to very dizzy heights on account of some very successful work in their line of practice, and here the author admonishes to be on guard lest we fall. It can be cheerfully said that all who read this book will profit thereby and prevent the blush and regret that comes from hasty action before careful meditation. The book deserves a place on the reading table of every medical man. J. B. F. W.

NEOPLASTIC DISEASES. A treatise on Tumors. By James Ewing, M.D., Sc.D., Professor of Pathology at Cornell University Medical College, New York City. Second edition, revised and enlarged. Octavo of 1054 pages with 514 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $12.00 net.

The second edition of this splendid book has been thoroughly revised and many new illustrations and data have been contributed to make it more instructive and helpful. The chapters on Tumors of the Bone and on Neuro-Fibromantosis have been extensively recast. Thirty-three new illustrations have been added.

It is the object of this work to present within reasonable space and in an accessible form the main features of the origin, structure and natural history of tumors. The writer first undertook to write a book on the general principles of Ancology, but soon found that the significant facts about tumors are not of general application but are best revealed in the study of special tumor groups even in special cases.

The first nine chapters of the book are devoted to General Ancology in which he presents the historical aspect of the subject, definition, classification and general pathology, Malignancy and its effects upon the organism, Metastasis, Chemistry of Tumors, Serology, Theories of the Nature of Cancer and Special Etiology of Tumors, Trauma, The Parasitic Theory, Experimental Cancer, Research.

The next section is divided into thirty-nine chapters and considers in order: Fibroma; Myxoma; Lipoma; Chondroma; Osteoma; Myoma; Angioma; Sarcoma; Clinical Types; Sarcoma of Bone and Bone Marrow; Endothelioma; Lymphoma and Lymphosarcoma; Tumors of the Brain; Tumors of the Nerve Trunk; Tumors of the Spinal Cord and Membranes; General Pathology of Epithelial Tumors; Tumors of the Breast; Cancer of the Uterus, Vulva, Vagina; Chorioma; Cysts and Epithelial Tumors of the Ovary; The Ovarian Teratoma; Carcinoma of the Stomach; Carcinoma of the Intestines; Epithelial Hyperplasia and Tumors of the Liver; Tumors of the Pancreas; Maxillary Tumors of Dental Origin; Epithelial Tumors of the Salivary Glands; Tumors of Kidneys; Tumors of the Adrenal; Tumors of the Prostate; Tumors of the Testis; Tumors of the Lung; Epidermoid Carcinoma, Melanoma; Tumors of the Thyroid; Thymus and its Tumors; Tumors of the Hypophysis; The Pineal Gland and its Tumors; Teratoma; Bibliography.

As noted by the above, the subject is well covered, beautifully illustrated and written in a manner so that it is especially adapted for the use of the pupil or teacher in the study of this major subject.

The author, therefore, is to be congratulated and the reviewer agrees that the object of the writer has been thoroughly accomplished and feels by thus rendering more accessible to English readers the knowledge of tumors he has contributed a splendid work towards the reduction of the mortality from cancer.

F. F. D. R.

THE SURGICAL CLINICS OF NORTH AMERICA, April, 1922, San Francisco Number. Philadelphia and London: W. B. Saunders Co., 1922.

Dr. John Homer Woolsey: *Anthrax Pustule.*—Following is an outline of this article: *Diagnosis:* (a) History of probable exposure. (b) Lesion nonpurulent, center gangrenous, marginal vesicle surrounding edema. (c) Typical organism obtained from pustule or from a vesicle. (d) Spores obtained from a culture. *Treatment:* (a) General supportive. (b) Antianthrax serum (2 to 3 cc.) locally every 24 hours. (c) Antianthrax serum in large doses (80 to 200 cc.) intravenously, observing the pulse and temperature curves and the general condition as a guide. (d) No surgical treatment.

Dr. Harold Brum: *Surgical Treatment of Cancer at Rectosigmoid Juncture.*—Halsted has said "The last word on the subject of intestinal suture may some day be written, but surely not until much experimental work has been done with an exactness not hitherto contemplated in investigations of this nature." We have not proved either the principles on which intestinal anastomosis should rest or the technical details by which it should be carried out. Bowel-end closure should be made as safe from infection as a gastroenterostomy. The method adopted by Dr. Brum is that of Parker and Kerr (J. H. H. Bulletin, May, 1908), viz: intestinal anastomosis without open incision, by means of the basting stitch. Preliminary colostomy or cecostomy is advised. The operation is as follows: (a) Exsection of the growth at either end by cautery between right angled forceps. (b) A basting stitch is used over the clamp, as in hemorrhoid operation, viz, a continuous mattress suture. The ends are left long, which permits of later removal. (c) The ends of the bowel are brought together and sutured (outside and around basting suture), first, by interrupted mattress, and second by continuous serous coat suture, after which the basting stitches are removed. By this method the bowel ends are opened only after they have been sutured together and not before, as in other methods. The longitudinal strain, which tends to pull the edges of the incision apart, equals only half of the circumferential strain, which tends to tighten the stitch if a continuous stitch has been used. Ten cases are reported, with two deaths. There are six illustrations.

Dr. Leonard W. Ely: *Chronic Arthritis of the Knee.*—In diagnosis of this disease one should depend less on examination of the knee joint than upon the history of the case. *Varieties:* (a) Tuberculous arthritis is uniarticular, slow and insidious and is shown by positive reaction to old tuberculin. It is painful and prone to form cold abscesses. It rarely attacks the joints of the fingers. (b) Infectious arthritis from the tonsils is multiarticular and attacks the metacarpophalangeal and proximal phalangeal joints. (c) Infectious arthritis from deep urethral infection is often located in the lower extremities in the calcaneal region, and may result in tubercle-gonorrheal periostitis. (d) Typhoid arthritis occurs in late stages of typhoid and is usually located in the hip or spine. (e) Syphilitic arthritis presents no definite peculiarity. Any or all of the above signs and symptoms may be present or absent. A radical operation for chronic arthritis should never be done until syphilis has been ruled out.

Tuberculosis of the bones is strictly a disease of the bone marrow and of the synovial membrane. These two tissues depend on function. Abolish function and the tissues disappear, and the disease is starved out. Operation should, therefore, be performed with the sole idea of destroying function. Do not scrape, drain nor pack the joints; close the wound up tight. Never mind the condition of the bone left behind nor of the synovial membrane. In tonsillar joints the damage is in the soft parts, not in the bone. Arthritis deformans, osteo-arthritis, hypertrophic arthritis, degenerative or metabolic arthritis are all the same pathological entity. The x-ray shows a peculiar lipping and spirring at the margin of the joint. In the terminal phalanges Heberden's nodes are often mistaken for gout. The cause has never been proved. The writer says: "A bone cannot be injured unless it is fractured. It cannot be bruised, sprained or strained." Trauma may be the cause of the symptoms but not of the disease itself. Alveolar infection is a frequent, but not the sole, causative factor.

The pathology is as follows: necrosis (from alveolar origin) of the bone marrow; falling off of necrotic focus from the joint by growth of new bone (eburnated); the cartilage, shut off from nutrition by the new bone, dies. This bone constitutes the "border exostoses." Fractures in old people are often due to infection about the bone ends.

Dr. Thomas W. Huntington: *The Radical Treatment of Carbuncle.*—The following method is especially adapted to early cases before the pool of pus has found exit: (a) A liberal incision is made over the convexity of the mass, down to but not into the underlying infected tissue. The tumor is isolated and extirpated by a free dissection through the healthy tissue. (b) With trichloracetic acid (15 grs. in a few drops of water) freely swab until the entire surface is heavily encrusted. Control the bleeding first by pressure. (c) Pack with gauze, which is removed in one week with the encrustation. Later and graver cases are treated by wide dissection and removal *en bloc.*

Reviewer's Note: In the J. A. M. A. (1909) will be found a method of aborting carbuncles if taken early—at the beginning of the pus formation or earlier. It consists of injecting subcutaneously (at base of infected area) a few drops of pure phenol, not allowing it to escape at apex of area. It has been most successful in the hands of the originator, Dr. H. D. Gardner, Scranton, and from experience the reviewer can verify the above.

Dr. Edwin I. Bartlett: *Clinically Doubtful Breast Tumor.*—The patient was 46 years old, with a single tumor and no skin nor nipple changes, nor glandular involvement. The tumor was of ten years' duration and of the original size. A cross section did not present a picture of malignancy, yet there might be cancer alongside the tumor. The growth was not encapsulated, but was similar to another cystadenoma with a small cancer in the center. Hence, though clinically and even microscopically benign, a radical operation was done, because in 18 cases of cystadenomata Bloodgood found one cancer, and in the writer's 4 cases 3 were malignant—that is there was malignancy in other parts of the breast. In this case a cystadenoma was shown in the midst of a scirrhus. Examination of the breast showed atrophy without other tumors or cysts. Cystadenomata are sometimes diffuse and nonencapsulated. Malignancy does develop in cystadenomata but not in fibro-adenomata.

Chondrosarcoma of Scapular Spine and Acromion Process.—The clavicular joint was uninvolved; the capsule nowhere broken. There was a sharp line of demarcation between the tumor and the uninvolved scapular spine.

Dr. Howard C. Naffziger: *Spinal Cord Tumors (Arachnoid Fibroblastomato).*—Endotheliomata are quite amenable to surgical treatment and the results are often brilliant. Syphilis is given undue prominence as a causative factor. The diagnosis is easy, and is indicated by a slowly oncoming paraplegia or quadriplegia, with a constant upper level of sensory involvement. The rate of growth of the symptoms and the degree of compression enable us to forecast, to a degree, the results of treatment. The author reports six cases, of which the histories and repeated neurologic notes have been condensed, with an abstract of the common findings. To summarize: *Present illness* might date back five or ten years, with pain in the back, radiating around to the abdomen, worse on reclining, relieved on standing, with a remission of symptoms for as long as ten months. Paresthesias were present, with a sensation of pin and needle pricking. There was gradual involvement of the bladder and rectum and of the legs. The legs would jerk involuntarily and the gait would be spastic, with a sudden aggravation of all symptoms. *Laboratory Findings:* Blood pressure, spinal fluid, Wassermann, x-ray—all may be and generally are negative. *Neurologic Examination:* Motor involvement was usually present, with some atrophy of the leg muscles, more marked on the side of the tumor, as was also weakened flexion, extension and contractile power of the muscles. The sensory examination is shown by twelve accompanying charts of a large number of studies, and areas of anesthesia and paresthesia are plotted off. Often there is no appreciation of passive movements of the joints. The character of the sensation is often normal but appreciation of it is abnormally acute. *Operation:* Subperiosteal laminectomy is performed at a point determined by careful regional study of sensory disturbances. After incision of the arachnoid the tumor is shelled out. When inaccessible anterior to the cord, the tumor is removed piecemeal. *Postoperative Notes:* In 24 hours the patient would be conscious of betterment. In 3 or 4 days there would be rapid progress, often terminating in recovery from long-standing motor and sensory paralyses. The article is well illustrated, gives full pathological reports, and will repay perusal.

Dr. Wallace I. Terry: *Intrathoracic Goiter.*—These represent 7 to 10 per cent. of all goiters. They are adenomata developing in either lobe or isthmus. Descent is favored by (a) direction of growth, (b) pressure of muscles anterior to thyroid, (c) gravity, (d) dragging effect of inspiration on a low-lying mass. There are two types, plunging and fixed. The symptoms are due to interference with the respiration or circulation or to toxemia, and are: wheezing; paroxysmal cough; dyspnea (like asthma) worse on lying down; dysphagia, due to the fact that the normal excursion of the larynx is inhibited by fixation of the trachea; sense of continued pressure in the upper part of the thorax; dullness on percussion in the upper thorax; pressure on the aorta and its upper branches; dilation of the veins of the neck, and cardiac disturbances. In operation the goiter may be so large that the sternum may be split longitudinally and the fragments wedged apart. Some details of the operation are given and three illustrations are included.

Dr. Leo Eloesser: *Leg Ulcers.*—Varieties of these ulcers are as follows: (a) Arteriosclerotic, sometimes with accompanying periostitis. (Nine x-ray illustrations are presented.) The ulcers are usually large, covered by a deep greenish slough over the tendons or periosteum. They may be well defined or punched out or may have scalloped edges. (b) Trophic. These are very painful, and are small, deep, punched out, and generally found at the internal malleolus. (c) Infectious—due to progression of a superficial skin infection from abrasion or from an old periostitis. Islands of epidermis remain scattered about in a large ulceration. (d) Varicose. These may be small, over a purplish venule (not over a large varicose vein), and covered by a scab. There are three contributing causes of varicose ulcer: (1) stagnation of blood in the veins of the leg; (2) poor nourishment of the tissues of the legs—skin, tendons, faxcia and bone, with little muscle; (3) exposure of the legs to infection. Their lymph vessels and those of the pelvis and anus empty into the same receptacle. Of 76 cases of leg ulcer admitted to the hospital, 25 were of arterial origin, 40 were varicose and 37 were infectious, some mixed.

Treatment: Clean ulcer, heal it and, finally, keep it healed. Mild lotions may be used, such as boric acid, lead acetate, etc., or a silver nitrate stick, or balsam of Peru, 10 per cent. Scarlet-red is harmful. Ointments may be used in ambulatory cases. Usually the patient should be put in bed, with the legs elevated. Once cleaned the ulcer may be healed with Reverdin (pinch) grafts, although Thiersch grafts are more suitable for large ulcers. Large circular arteriosclerotic ulcers in elephantiasic legs are incurable and amputation is indicated. The patient should be discharged only when the ulcer is completely cured, not when it is only "practically" healed. Zinc-gelatin bandage is good if the patient will report frequently. (Formula is given.) Trophic ulcer may be cured by resection of saphenous nerve.

Dr. Ernest W. Cleary: Restoration of Function After Certain Injuries of the Extremities.—(1) In delayed union of fractures physiotherapy is valuable. Immobilization should not be continued too long. Bone grafting should be tried only after the failure of prolonged physiotherapeutic measures. (2) The degree of functional activity, not the x-ray evidence, should be the guide for or against operation. Bone plating is condemned. (3) Traction by ordinary methods is inadequate to stretch large muscle groups which have been shortened for a long time. (4) Abduction traction (right angle) should be used in cases of fractured femur necks. (5) Shoulder-joint traumatisms are best treated by the right angle abduction splint of Robert Jones. D. A. Webb.

THE PSYCHIC HEALTH OF JESUS, by Walter E. Bundy, Ph.D., Associate Professor of English Bible in DePauw University. New York: The Macmillan Company, 1922.

The first paragraph of this book reads: "The task of coming to a newer and fresher understanding of Jesus is the bounden duty of all confessed Christians, whether orthodox or liberal, theological or lay. The present study has been made with this one thought in mind. From the more strictly scientific point of view this study aims at two things: (1) a comprehensive survey of the pathographic judgment against Jesus in both its early and its developed stages; (2) a determination of the correctness of the pathographic position as based upon a sifting of the New Testament sources."

The author quotes extensively from various writers —philologists, sociologists, psychologists, psychiatrists and pathographers who have pronounced Jesus to have been more or less mentally abnormal. After discussing the beliefs, statements and deductions of these writers he closes the book as follows: "To those who would see and know him (Jesus) as he really was and is, the writer would recommend that they take up the first three books of the New Testament and read them with a will, and feel again the warm, unartificial and natural impression that radiates from the currents, cross-currents, and counter-currents of the life of him who is their theme. Jesus is great and grand enough as he stands in the New Testament history. No matter how striking the style, no matter how careful the command and choice of language, we cannot by taking either thought or pen add a single cubit to his stature."

According to the author all the negative pictures of Jesus in the psychiatric sense have come from Germany, with two exceptions—a physician of New York City, a specialist in mental diseases; and a professor in the School of Psychology in Paris.

The reviewer is a plain practitioner of medicine accustomed at times to make a diagnosis at variance with the information furnished by the patient who is believed to be either uninformed or purposely misleading, and again arriving at a diagnosis contrary to the report from the laboratory believing the laboratory worker either unreliable or lacking in experience. The rather extensive quotations from the pathographers and others given by the author have been new reading to the reviewer, who on first reading sometimes felt as one might feel if desecting the body of his mother. After rereading the book and several readings of certain chapters the most lasting impression on the reviewer is the diversity of opinions and conclusions regarding Jesus (as well as other Biblical characters) of those who have written of Jesus as abnormal. One is reminded of the witnesses at the trial of Jesus before the high priest, Mark 14: 56, "and their witness agreed not together." C. L. S.

PRACTICAL MEDICINE SERIES OF 1921. THERAPEUTICS AND PREVENTIVE MEDICINE. Edited by Bernard Frantus, M.S., M.D., Associate Professor of Therapeutics, Rush Medical College, and Wm. A. Evans, M.S., M.D., LL.D., D.P.H., Professor of Sanitary Science, Northwestern University Medical School. Chicago: The Year Book Publishers, 1922.

The authors present for convenient and rapid survey many valuable points that have been brought out in this department of general medicine during the past year.

The work maintains its usual high order of merit. A. C. M.

VITAL FACTORS OF FOODS, VITAMINS AND NUTRITION. By Carleton Ellis, S.B., F.C.S., Consulting Chemist; and Annie Louise MacLeod, Ph.D., Associate Professor of Chemistry, Vassar College. D. Van Nostrand Company, New York, 1922.

It is indeed a pleasure to review such a well-balanced and thorough exposition of this important subject. Every physician must frequently solve problems in nutrition and in order properly to do this he needs not only a clear understanding of the physiological utilization of the long recognized elements of the foodstuffs —protein, carbohydrate, fat, salts—but he must also take into account the more recently discovered elements or properties of foodstuffs, the ingestion of which is absolutely necessary for growth and maintenance of health.

Until very recently it was thought that the clinical application of the science of nutrition consisted in balancing the carbohydrate, protein, fats and salts in correct proportion and sufficient amounts to give a certain number of calories. This was even carried to the point of attempting to sustain life on "synthetic diets"; but at this point there came to light the fact that there were present in natural foodstuffs some unidentified factors that are essential for the growth and well-being of the animal organism. Additional light was thrown on these bodies by studies of beriberi, scurvy and other deficiency diseases. The term "vitamins" was applied to these unknown substances. An enormous amount of research has been pursued in this field in the last few years and a great deal of interesting and valuable knowledge has been acquired. In this volume the authors have presented the present knowledge of the subject in a truly masterful manner. In the introduction the elementary principles of nutrition are concisely set forth in order that the student may retain a broad grasp of the field as a whole. Then there is taken up the vitamins, what they are, and what they do, together with a historical account of the development of the science of nutrition and the vitamin hypothesis. This naturally leads to a full description of the experimental methods, a careful study of which acquaints the reader not only with the judgment and patience required for such work, but also with the great value of the facts being uncovered. Chapters are then devoted to the distribution of vitamins, the stability of vitamins with regard to conditions of cooking, drying and storing—all of great practical value. The different classes of vitamins are considered, their properties and possible chemical nature, and also the concentrated, stable preparations, even to the various commercial forms at present on the market. The succeeding ten chapters take up the rôle of vitamins in nutrition, the various deficiency diseases, milk, vitamins for the baby, what to eat from the vitamin standpoint and the use of vitamins in clinical medicine. The index is unusually complete, adding greatly to the usefulness of the book as a reference volume. As a whole this work is a masterpiece, valuable alike to the student of nutrition, the physician, the dietitian and even the layman. The literature, already very extensive, is thoroughly covered, and presented completely and with beautiful continuity. The scientific facts are strictly adhered to and yet the interesting and practical deductions are brought forth in such a manner as to hold the attention and stimulate the imagination. It is a book well worth careful study. R. R. S.

CLINICAL TUBERCULOSIS, by Francis M. Pottenger, M.D., LL.D., Medical Director Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, Cal., second edition. 2 vols., 1432 pp. with 170 text illustrations and charts and 10 plates in colors. C. V. Mosby Co., St. Louis, 1922. Cloth, $15.00.

Anyone occupied along special lines for twenty years without writing an instructive book or its equivalent, either has not done good work, or is lacking in his sense of duty to the younger generation. Pottenger has met this ideal; he has done good work, and he has written a number of interesting and instructive articles, which he has put into book form.

This work is in two volumes of over 700 pages each, and covers very thoroughly the subject of clinical tuberculosis. If it were compressed into one, however, it would be greatly improved. It would require but little editing to eliminate innumerable superfluous words, clauses and sentences, as well as ideas, the plausibility of which is too far fetched. It often reads as if it had been dictated to a stenographer in the rather loose-wordy way the majority of us dictate, and no effort made at condensation. It is overcrowded with the conjectures which occur to us on the spur of the moment, but are based on such flimsy substructures that we refuse to let them stand on second reading.

His quotations from other authors are almost invariably too extended. The majority could be cut in half and the remainder, if put into other words, could be compressed into a quarter the space. In Chapter V, on "Factors Which Predispose to Tuberculosis," he gives us page after page of quotations, often to no good purpose. The same is true in other chapters. The charts comparing the temperature and pulse-rate, taking up over thirty pages, could be reduced by half and mean just as much. In addition, the comparison would be more evident if the temperature and pulse-rate were put on the same level in black and red, or broken and unbroken lines, instead of on two levels. His conclusions drawn from these comparisons are by no means as clear as he appears to believe.

He makes entirely too many unqualified statements, like (p. 291) "In extensive left-sided disease, dragging on the trachea often provokes cough." Maybe it does, but we see extensive left-sided disease with deviation of the trachea without cough too frequently for this explanation to stand without question. Again (p. 310), "The patient had a very pronounced splanchnic congestion." Maybe he had, but Pottenger has not proved it. On account of this tendency to oversureness, in his sixty-page chapter on the Digestive System, he is brilliant only in the one-page-discussion of "so-called biliousness."

Occasionally he is loose in his spelling of proper names, like for instance, Pyre's patches (vol. I, p. 122) and Godley (Vol. II, p. 75) of Fowler & Godlee; both of which are repetitions from the previous edition. Sometimes he is loose in his terms, like the employment of hilus for hilum, which, though occasionally employed, is actually without justification.

The principal pioneer work for which Pottenger deserves commendation is in regard to spasm of muscles of the chest overlying active disease of the lung, and later wasting of the muscles and cutaneous and subcutaneous tissues in the same region; and his light touch palpation in defining the limits of organs, and in the diagnosis of pulmonary conditions. All of this is treated at length in the two volumes, making them deserve, at least, a place of reference in medical libraries. With two other recent American textbooks on tuberculosis (Norris & Landis and Fishberg) of half the size, half the price, and quite as thorough, it must stand below them for recommendation to the medical student. J. W.

THE PLACE OF VERSION IN OBSTETRICS, by Irving W. Potter, M.D., F.A.C.S. Obstetrician-in-Chief, Deaconess Hospital and St. Mary's Maternity Hospital, etc., Buffalo, N. Y., 160 pages, 6½x9½, with 42 engravings from original drawings, many in two colors. Price, silk cloth binding, $5.00. St. Louis, C. V. Mosby, 1922.

This book sets forth in detail the "Potter method" of doing version, and each step in the technic is illustrated. The following is from the "foreword" in the book:

"The purpose in writing the following pages is to bespeak a wider employment of the operation of version—using this term as it is now generally understood by the medical profession—that is, the *internal podalic version* of obstetric literature.

"From an experience extending over many years of practice, including thousands of personally conducted cases of labor, I have come to believe that it is justifiable to perform a version for the purpose of eliminating the second stage of labor, and relieving the woman of the pains and agonies of childbirth, since such a procedure in my hands has been attended by no increase of fetal mortality and has had a lessened maternal mortality and future morbidity. This conclusion does not seem to me to be an innovation in obstetric practice, but rather a logical advance and extension of a perfectly understood maneuver which has been made possible by the modern conception of asepsis with anesthesia.

"When my practice and conclusions were first presented to the medical profession at large, I was met by persistent opposition and bitter criticism. Not only was my method condemned as unscientific and dangerous, but my records and statistics were regarded as doubtful and my personal good faith called in question. After a lapse of several years the attitude of the profession has been modified; my records have been accepted and my personal honesty acknowledged. Opportunity has been afforded to any one who wished to observe my method in actual practice, and a great many men, many of them distinguished in the profession, have paid me a visit. Some of those who formerly denounced me and my methods are now silent; others who began by occupying the position of the man from Missouri, are at present outspoken in their commendation of my practice; and a large number have made a study of the procedure, thereafter successfully applying it in their own work.

"The assertion that my method could not and should not be taught to 'the average obstetrician in any of the lying-in hospitals' has been disproved, and I no longer hesitate to say that any competent man can learn to perform this version safely and skillfully."

There are many who do not agree with the author as to the "viewpoint" expressed by him for the routine performance of version. A percentage who read this book will be converted to the "Potter Method." But whether you agree with him or not as to routine version, there are very distinct indications for the necessary performance of version in one's obstetric practice, and here the book is of inestimable value. The author has performed version on so many cases that he is in a position to outline the technic as no one else can, owing to his overwhelming experience. Every specialist, of course, should have a copy of this book; and it should be emphasized that every practitioner active in obstetrics should have a copy, too, in order that he may be taught version, as based upon the extensive experience of the author. One who is thoroughly conversant with the technic as outlined, will save more babies and lower the mortality and the morbidity of the mother in cases where version is obligatory, even though he does not use the procedure routinely, as given by the author. F. C. H.

NEW AND NONOFFICIAL REMEDIES. Containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1922. Issued by the American Medical Association, Chicago.

The work of the Council which finds expression in *New and Nonofficial Remedies* is of vast importance to the medical profession of the United States. This book as revised up to the beginning of this year affords the busy practitioner a ready reference book on the newer remedies which have been accepted as well

(*Continued from page 58*)

who sees about him prosperous business men who have profited by his safe counsels.

"If we place in contrast two families of equal financial and social position and general intelligence, and one of these families avoids all association with the family doctor except in time of urgent necessity and the other family keeps in frequent communication with the physician on the lines above suggested, it is interesting to consider what may develop in ten years. In the first case the family will have acquired no additional knowledge of self-preservation. They will perhaps have passed safely through some serious illnesses, but are still walking along life's pathway blindfolded. The other family will have acquired a general knowledge of self-preservation and will have been able to detect approaching indispositions so as to bring the doctor into such cases while there is yet time to make a defensive battle. In the one case the doctor will have been paid considerable sums for the treatment of acute illnesses. In the other he may have received even greater compensation for constant supervision. It ought not be difficult to decide which investment in medical services is likely to prove the better."

In these excerpts we think we have given the reader the general gist of the book. To the doctor the author says, "Keep in touch with your patients and tell them what may happen to them if they persist in foolish conduct, before it is too late." To the patient he says, "Consult your physician constantly, take him into your confidence, and listen to what he tells you and you may add many years to your life." We were for a time at a loss to know whether the book was written for the doctor or for the patient; we find it useful to both. It is an excellent book for the physician's office or waiting-room table, where patients can pick it up for a hasty glance. It is full of good sense, though not always of good science, and it abounds with quaint anecdotes, some of which are amusing, though most of them are on the order of horrible examples of what may happen if the doctor's injunctions are not obeyed.

One of these will suffice: "An example of this form of superb self-confidence was exhibited in the instance of the proprietor of a prosperous drug store. Smiling, bland, and rotund, with a ruddy complexion, this man was always on duty at his store. His appetite never failing, it was his custom to carry home a thick steak and broil it for himself for a midnight supper after his family had gone to bed. This unhygienic practice was abruptly terminated when he was about fifty by a profuse gastric hemorrhage. Gastric ulcer soon performed its perfect work. A word of timely caution by some one of the physicians who knew him intimately might have changed the history of this case."

Is not our optimist a little optimistic in his interpretation of this case? But we will forgive him for that on account of the following: "If the patient of irascible temperament were to be advised by his family doctor to take a saline cathartic immediately following each attack of wrath, to be followed by a very simple diet for at least twenty-four hours, it is probable that the effects would be very beneficial both physically and morally."

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(*Continued on page xvi*)

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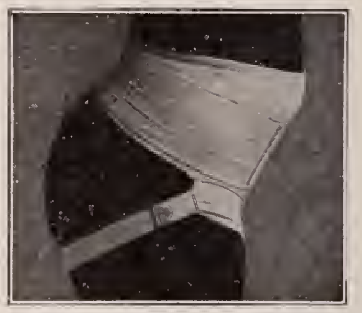

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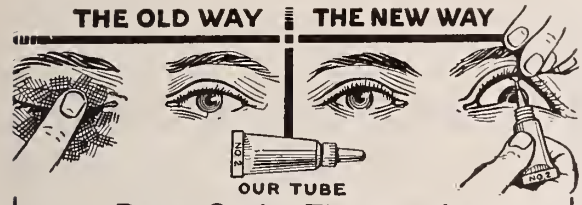

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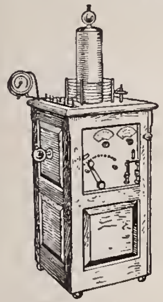

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(*Continued from page xiv*)

We recommend the book, not as professional reading in the strict sense. but as good and profitable relaxation with a wholesome professional kick in it.

J. McF.

THE PERFECT GENTLE KNIGHT. By Hester Donaldson Jenkins, Ph.D., with an introduction by Charles M. DeForest, Modern Health Crusader Executive. Paper, 59 pages, illustrated with original drawings and with reproductions from old engravings. Yonkers-on-Hudson, N. Y.: World Book Company, 1921.

It is a world-old problem, that of getting a child to care properly for his most precious possession—health. But if the necessary care can be made into a game, the problem will largely take care of itself. Dr. Jenkins' little pamphlet should be an admirable aid, with its charming stories of the knights of ye olden time, and ending with a chapter that applies to the "modern health crusader" the principles and ideals that animated these knights. M. S. B.

SHORT TALKS ON PERSONAL AND COMMUNITY HEALTH, by Louis Lehrfield, M.D.

Barring a number of typographical errors and a few statements on pages 26 and 28, which I cannot endorse, the book contains much valuable and practical information. In form and style it is well suited for eighth grade pupils, high school pupils and the laity in general. G. E. H.

THE MEDICAL CLINICS OF NORTH AMERICA, January, 1922. New York Number. Volume 5, Number 4 Philadelphia and London: W. B. Saunders Company.

Although the number of articles in this issue of the *Clinics* is smaller than usual, their practical character is outstanding. Authors and titles follow: A. R. Lamb and W. C. von Glahn, Staphylococcus Aureus Endocarditis; E. P. Boas, the Rôle of the Capillaries in Circulatory Disorders; H. O. Mosenthal, The Treatment of High Blood Pressure; W. T. Longcope, Epidemic Jaundice; A. A. Epstein, Chronic Nephrosis; I. L. Kantor, Appendicitis; B. B. Crohn, Tabetic Crises and Associated Gastric Ulcer; J. G. M. Bullowa, Hypernephroma with Spinal Metastases and Acute Thyroiditis; H. Brooks, The Treatment of Pneumonia; A. S. Blumgarten, The Endocrine Factors in Some Common Functional Disorders; B. Ratner, Rabbit-hair Asthma in Children. A. A. E.

ORGANIC DEPENDENCE AND DISEASE: THEIR ORIGIN AND SIGNIFICANCE, by John M. Clarke, D.Sc., Colgate, Chicago, Princeton; LL.D., Amherst, Johns Hopkins; member of the National Academy of Sciences; New York State Paleontologist. Cloth, 113 pages with 120 illustrations. New Haven: Yale University Press; London: Humphrey Milford, Oxford University press, 1921.

The author of this interesting little book has given a very clear delineation of the relation of disease to dependent living. While the views inferred as to spontaneous life may not be accepted by all, the great majority of readers will agree that it is the safer deduction. However, as he well says: "We may speak freely of the first fauna known to us—with deductions regarding the nature of its ancestors upon earth." Starting with the Cambrian Fauna with its evidence of organic life between sixty and a hundred million years ago, he logically builds his case for organic dependence and the origin of disease.

The "dependence" idea is that condition of parasitism or absolute dependence of one animal or plant upon another's vital functions. This symbiosis may

(*Continued on page xviii*)

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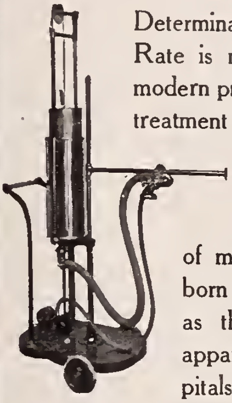

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(*Continued from page xvi*)

be apparently harmless or even of benefit to the contracting parties, but the end result is always degenerative, and once the dependant habit is established there is little chance of reaction. Any departure from normal living spells disease and anything that interferes with the full activity or impairs the physiology of a living thing, blocks normal living. Normal living means independent living. If dependence invades any organ or an individual, such living is degenerative and makes for disease.

The chapter on Cambrian Fauna of North America is well written and shows the result of careful study. The book is a good one and can be recommended to those interested in paleopathology. A. J. S.

NEW AND NONOFFICIAL REMEDIES

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ANTISTREPTOCOCCIC SERUM—P., D. and Co. (See *New and Nonofficial Remedies*, 1922, p. 289).—Also marketed in piston syringe containers, containing, respectively, 20 Cc. and 50 Cc. Parke, Davis & Co., Detriot (*Jour. A. M. A.*, June 17, 1922, p. 1893).

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VOLUME XXVI
NUMBER 2
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ADDRESS

THE ECONOMICS OF THE PRACTICE OF MEDICINE*

ALFRED C. WOOD, M.D.
PHILADELPHIA

If "man cannot live by bread alone" it is equally true that practitioners of medicine cannot live by science alone, and with your permission, I will direct your thoughts to the economic or business side of our work.

I cannot hope to say anything that has not been said in better and more convincing form by others, but notwithstanding all that has been said and written, it must be admitted that as a whole we have failed signally to profit by the suggestions offered.

No argument is needed to convince you that we have not changed our business methods as rapidly as the changed conditions justify. The surgeon's armamentarium to-day costs many times what it did in former days. His income has not increased in proportion. This cannot continue indefinitely. Unless the business side of medicine keeps pace with the scientific side the latter must eventually suffer. It seems to me, therefore, that our program should always contain some thoughtful papers on the economics of the practice of medicine.

The April, 1922, issue of THE PENNSYLVANIA MEDICAL JOURNAL (p. 488) contains a very sane contribution to this subject from Dr. Theodore Diller, under the title, "Shall a Physician Make a Doctor of His Boy?" The discussion is further elaborated by Dr. Diller in the September 16, 1922, number of the *Journal of the American Medical Association* (p. 986). No one can read these articles, it seems to me, without being impressed that there is something wrong somewhere with our economics.

With full recognition of the urgent importance of this whole subject, time will permit me to speak of but one point. I refer to the Workmen's Compensation Act of June 2, 1915, and the subsequent amendment, as they affect the surgeon.

It may be recalled that one of the principal arguments, if not indeed the principal argument, was that industry was obligated to take care of the injuries of the workmen therein. Before this act became effective (January 1, 1916) a man receiving a serious injury in his work was usually sent to a hospital, where he at once became a free or charity patient. This, it was argued, was all wrong. The workman, it was said, was injured in his employment. It was unjust to him to be classed as an object of charity. He had earned the right to have, and he was entitled to the best treatment obtainable, and the industry in which he was engaged should bear the cost thereof. To quote Mr. Mackey, "Industry, in the first instance, must pay the toll of its own misfortunes" (Bull. of the Dept. of Labor and Industry, vol. viii, ser. 1921, No. 1).

It will be recalled that the original compensation act of this state contained the following provisions: "During the first 14 days after disability begins, the employer shall furnish reasonable surgical, medical and hospital service, medicines and supplies as and when needed. * * * The cost of such service, medicines and supplies shall not exceed $25.00 unless a major operation shall be necessary, in which case the cost shall not exceed $75.00." It will be observed that surgical, medical and hospital services were all included in one phrase, and no directions were given as to whom payment should be made, or how the fees were to be allotted.

Soon after this act became effective, D. T. Test, Superintendent of the Pennsylvania Hospital and President of the Association of Hospital Superintendents, called a meeting of the latter to decide how these funds should be handled. No account of the discussions has come to my attention, but the conclusion was reached that the hospitals should collect and keep all of the fees available. This decision was as ungenerous as it was unjust. The members of the respective staffs of the hospitals represented were not consulted. The action was put over without giving the surgeons any opportunity for a hearing. It may be noted that the doctors did not hold any meetings in their own interest.

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*The Chairman's Address, delivered before the Section on Surgery of the Medical Society of the State of Pennsylvania, October 3, 1922.

The law was amended June 26, 1919. An effort was then made to rectify this feature, as indicated in the following words (Section 306, paragraph "e"):

> "During the first *thirty* days after disability begins, the employer shall furnish reasonable surgical and medical services, medicines, and supplies, as and when needed." * * * "The cost of such services, medicines, and supplies shall not exceed *one hundred dollars.*" *"In addition to the above services, medicines, and supplies, hospital treatment, services and supplies shall be furnished by the employer for the said period of thirty days. The cost for such hospital treatment, service and supplies shall not in any case exceed the prevailing charge in the hospital for like services to other individuals."*

It will be observed that the paragraph quoted consists of two distinct and separate parts: first, provision for reasonable surgical and medical services, medicines and supplies, and payment therefor; and second, provision for hospital treatment, services and supplies, and payment for the same. In order to make these two parts of the act still more distinct than the mere words, the second part is printed in italics. Although the phraseology is clear enough to the ordinary reader, the surgeon is still denied his fee in cases treated in certain hospitals, the insurance companies and these hospitals taking the ground that hospital treatment includes surgical services, and that payment of the hospital charges includes the services of the surgeon. It is perfectly well known that it was the understanding and intent of those who framed this amendment that the medical services to the injured workmen were to be paid for. No qualifications were made or considered at the time the act was passed or before. Mr. Mackey, the stanchest supporter of this legislation, says of the section under consideration: "Its purpose was well understood at the time." (Written opinion, case of John A. Yost vs. Coxe Traveling Grate Co.) In fact I found no one who denies this. The idea that the hospital charges covered the surgeon's fee was developed by certain interests some time after the act became a law. Who can furnish reasonable surgical and medical services? No one but the qualified, licensed medical graduate, and these services, according to the law, are to be paid for.

And here we meet with another surprise. The law clearly says: "The cost for hospital treatment, service and supplies, shall not in any case exceed the prevailing charge in the hospital for like services to other individuals." Yet many hospitals, perhaps most, have established a set of charges in these industrial cases for x-rays, operations, etc., even including the services of the surgeon, although the surgeon receives no part thereof. This is clearly in violation of the law. Please note that for the purposes of the hospital, these industrial cases are charged for services that other ward patients do not pay for, while in respect to the services of the surgeon they are classed as ordinary ward or charity cases. No one will deny that hospitals are always in need of money, but can this be offered as an excuse for perverting the law and denying justice? When it is considered that many of you have done your full share in collecting money for the hospitals in which you are interested, a greater degree of reciprocity might have been expected.

Surgeons, following the spirit and letter of the law, have maintained that two separate fees were provided for and that the surgical services were to be compensated for in addition to the hospital charge. Although the amended act became effective January 1, 1920, and notwithstanding many appeals by surgeons to the Compensation Board, it has seemed impossible to obtain a ruling on this point until recently, the Board and its attorney refusing to express an opinion, until a "test case" was brought before it. Just why the Board was unable to decide this point, but was able to read into the law the provision that the hospital charges in any case should not exceed $100.00 is not clear.

Finally, the case of John A. Yost vs. Coxe Traveling Grate Co., was placed before the Board for a decision. Briefly the facts are as follows: Yost was injured while at work, March 25, 1920, and taken to the Pottsville Hospital. The surgeon on duty, Dr. M. C. Householder, was called. The injuries were: compound fracture of both radius and ulna at the lower third; complete laceration of the extensor muscles and tendons. The fractures were reduced and the lacerated muscles and tendons sutured, requiring some two hours in time, and as you all know, a high degree of surgical skill. Twenty-seven visits were paid to the patient, subsequently, including the redressing of the arm. The patient was in the hospital twenty-five days. The hospital bill was $87.00, which the insurance company paid; but it declined to pay Dr. Householder his modest bill of $65.50 on the ground that he was acting for the hospital and that the bill included his services.

The case was heard by Referee Seidel of District No. 2, who took the view of the insurance company, refusing Dr. Householder any fee for his services, although the insurance adjuster admitted at the hearing that the excellent result that followed Dr. Householder's skillful treatment had saved the company $1,750.00. An appeal was taken, upon which the Chairman of the Compensation Board handed down an opinion sustaining the referee. Dr. Householder then appealed the case to court, and after a hearing, Judge Koch confirmed the opinions previously given. The arguments in each instance were practically identical, and the following *"Conclusions of Law"* by Judge Koch, will serve for all:

> "Since the services rendered by Dr. Householder were rendered for the hospital, and not in his individual capacity, and since it is the rule of the hospital not to charge ward patients for operations performed and subsequent attention given by its surgeon-in-chief, we declare that claimant is not entitled to be paid the amount of Dr. Householder's bill, particularly in this case since the hospital was paid its charges for hospital treatment, services and supplies.
>
> "The services rendered by Dr. Householder to the claimant cannot be divorced from the hospital treatment, since his own testimony was that he operated for the hospital. In other words, his service as chief of staff, was rendered gratuitously to the hospital and also to the patient, the claimant, and must have been so regarded by the hospital, when it rendered its bill to him for treatment, services and supplies." * * *
>
> "The compensation law provides that, 'Any party in interest' may appeal to the Compensation Board from the referee's award. * * * Strictly speaking, only parties in interest are allowed to appeal. 'Any party' or 'any party in interest' does not mean anybody, or everybody, who has some indirect interest in the result of a claim. Parties to an action are only such as are directly interested in the subject matter and who have a right to control the proceedings, to make defense, to adduce and cross-examine witnesses and to appeal from the decision, if any appeal lie. * * * In our view of the case we have no right to consider Dr. Householder a party here, and, therefore, are obliged to disregard the question intended to be raised by his attempted appeal, objection having been made to the appeal on that ground by the defendant who is a party in interest."

In regard to the foregoing opinions I submit that the injured employee has been placed just where he was prior to this act, as a charity patient, so far as professional services are concerned. Any one who has taken the least trouble to inform himself on the subject knows perfectly well that physicians and surgeons have never declined to treat the poor in hospital wards, on the basis of charity. He also must know that no public hospital pays the attending staff for its services, and it must follow that the hospital has no claim upon the services of the staff, except in pure charity cases. The misinterpretation of the law quoted, has led some hospitals, perhaps unwittingly, to exploit the surgeon, in securing his services for nothing, but making a charge therefore to the insurance company. It is a fundamental principle of economics that you cannot have something for nothing. It is equally fundamental in law. As I see it, the result of the decisions quoted is to take sixty-five well-earned dollars from the pocket of Dr. Householder, that the intent and wording of the law allowed him, and to give it to the insurance company, against the admitted intent of the law. Do the opulent insurance companies or the industries of this great state stand in need of charity? If so, let it be broadcasted that the medical profession is giving them the only charity they are receiving; if not, let us be rid of the pretense that a bill for hospital services includes remuneration for the surgeon's work, and see to it that the surgeon receives "his just due" as well as the others whom the law includes.

Considering the subject from the standpoint of a layman, I would say the only agent that can supply the aid needed to restore the injured workman is the surgeon. The hospital is incidental, a convenience it is true, but in most cases the workman might have been treated in his home or in a hotel with equal success. To put the hospital first in importance and the surgeon second is certainly to place the cart before the horse. To say that the only party indispensable in repairing the injuries to the workman is not "a party in interest" does not sound like common sense, even if it be the law.

In a "Message for the New Year," from the fluent pen of the Chairman of the Compensation Board, we read:

> "The old Roman lawgiver, Julian, defined justice as an ever present desire to accord every man his just due. This is the thought that guides all the modern instrumentalities created for the purpose of administering modern laws calculated to disseminate an equal social justice among all men and women.
>
> "These thoughts gave rise to modern compensation laws. These enactments are scientifically constructed to mete out justice, not charity. Any law otherwise conceived could not long survive in an enlightened community."

The quotation concerning "justice" is one Mr. Mackey is fond of using in his addresses. Can anyone say the surgeon has received "justice" in the working of this law? However, if we are not satisfied with this act, let Mr. Mackey tell where the blame lies. He says:

> "I am explaining the provisions of the law as they affect the medical profession; not to amend it nor to apologize for it. The fact that this legislation was being considered by the last legislature was known to every citizen of the state. The employers did not overlook the fact and they saw to it that they were well represented, not only before the commission that had been working on this law for several years, but also before the committees that considered the legislation primarily before it was reported out, and its terms were thoroughly discussed by them with each member of the legislature. Therefore the legislators had the advantage of the employer's viewpoint. The same observations are particularly true as to representatives of labor. If the medical men feel that the Pennsylvania act is somewhat restrictive upon their profession, it might be well for them to remember that probably they did not take the same care of their in-

terests that the employer and the employee did at a time when their advice would have been very welcome and most instructive." (Address before the Alumni Association of Jefferson Medical College, February 24, 1916.)

Frankly, can we entirely excuse ourselves for the conditions as they exist? Have we not failed fully to inform those who should have been informed of our side of the question, and especially have we been sufficiently alert and insistent at the crucial moment? On the other hand, have any errors been committed on our side? These are important questions, in my opinion, which we must seriously consider. Before criticizing others, it is our duty to see to it that we play our own part fairly and aggressively. This is a large contract. It is not a job for one man nor a few men. Every member of our Society must be enlisted. We must bear in mind that the interests opposed to us at this time are powerful and well organized. It is fully understood that a certain number of you, perhaps a large number, have for various reasons no direct interest in this matter, but we should each feel a concern in regard to anything which is in the interest of the profession in general. Not one of our members can suffer without others being affected to some extent, and if large numbers fail to get their due the level of the professional standard is inevitably lowered.

There is a great amount of misunderstanding to be corrected. The compensation act has raised new problems vitally affecting both surgeons and hospitals. These problems can be settled more fairly and more expeditiously if representatives of both these interests act harmoniously together than if each acts independently of the other. I believe the hospitals must recognize that the Compensation Act has established a new class of patients—the industrial accident cases—and provide for them. They do not belong in the charity wards. The matter is simplicity itself, and needs only a resolution of the board of each hospital to set aside a certain ward or part thereof for these cases. Some hospitals have done this, to the entire satisfaction of the institutions and their respective staffs. Who is to take the first step in this matter? Shall the staff await the initiative of the board, or shall we take the first step in the effort to correct abuses that may now exist?

The Compensation Act is here to remain, in some form or other. The surgical treatment of the accidents coming under this law must be taken care of by the medical graduates. Shall it be the reputable, regular members of our Society; or shall it be the irregulars, or those who give up all interest in medicine except to secure and hold as much of this work as possible, merely for the financial returns and quite independent of the most efficient service possible. This question may have a deeper significance than might appear at first thought. In a city of an adjacent state, a doctor has organized a medical service for compensation cases exclusively, and maintains over thirty dressing stations in different parts of the city. Each of you is at liberty to estimate how many surgeons of that city have been deprived of the legitimate work of their respective territories. What is to prevent this individual, or others, from multiplying this number indefinitely, and eventually controlling all the work of the city?

The insurance companies that carry these industrial risks do so on a purely business basis. If we can satisfy them that it is to their financial advantage to employ the regular members of the medical profession, we will get the work; otherwise it will go to others. If there are any irregularities on our side it seems to me we should deal with them within our Society.

Everyone interested, and I hope that means each one of you, should read the opinions handed down in the case referred to. Throughout, these industrial cases are classed as ward cases, which implies charity cases, apparently forgetting that the law "was constructed to mete out justice, not charity."

Mr. Mackey further says in the opinion referred to:

> "We are interpreting a statute and not making new law. If this interpretation is not in accordance with the best thought of the medical fraternity, it has its remedy in an appeal to the legislature to further amend this law to accord to the profession the right that it seeks in this proceeding."

Will you, or will you not *accept this challenge?* May I summarize some points that seem to me of importance?

1. My understanding of this subject is that it has always been the intent of the Compensation Act that surgeons should be paid for their services.

2. After the passage of the original act the surgeons were denied a fee in hospital cases, largely through the instrumentality of the Association of Hospital Superintendents, under the direction of its president.

3. The surgeon's fee was again denied after the amended act, in part by the same influence, but also by various insurance companies, who were no doubt supported more or less by others unknown to the writer. It is to be noted that the Compensation Board admitted that the intent of the law was that the surgeon should be paid, but declined to assist in carrying this out.

4. A well organized attempt seemed to have been made to show that a member of a hospital staff is an employee of the hospital, and acts as its servant. There is not the slightest foundation for such an opinion, and its error must be shown.

5. We must see to it that a distinction is made between these industrial accident cases and the usual ward cases, even where both are placed in the same room.

6. In any future amendment of this law the wording must clearly indicate that the surgeon is to receive proper remuneration, wherever the patient may be treated.

7. Provision must also be made for the collection of the surgeon's bill, so that hereafter he may be considered a "party in interest."

8. Irrespective of the most clearly worded act it will be necessary to have the force of the entire profession of the state back of it, otherwise some clever lawyer will find some interpretation to rob the surgeon of his fee again.

If there is a trouble to be corrected, the first step is to ascertain through whom the trouble has come. I have summarized briefly the situation as I see it in my locality. It may appear different to others and in other parts of this state. Personally I censure those who have administered the law, rather than those who framed it.

If I have detained you too long, it has been solely with the purpose of bringing the matter as forcibly as possible to your attention. My effort and your time have been wholly wasted unless some suitable action is taken. If, as a Society, you feel that it is useless to endeavor to correct any of the conditions that now exist, then we should do nothing. If, on the other hand, the majority are not satisfied, we should at once take steps to correct what we feel is unfair to our profession.

Complaints of individual surgeons get us nowhere. It is only the united action of the entire profession of the state that will enable us to secure the recognition to which we are justly entitled.

ORIGINAL ARTICLES

THE IMPORTANCE OF FLUID INTAKE IN THE TREATMENT OF KIDNEY INSUFFICIENCY*

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Far too frequently one sees patients in whom a restriction of fluid intake has formed a part of the treatment of kidney insufficiency, nephritis or hyptertension. An increase in the patient's usual water intake is indicated far more often than a reduction, and much harm is done in many cases by a failure to insist upon an adequate intake of water or other fluid.

It is a popular but mistaken belief that one can "rest the kidney" by reducing the amount of fluid taken into the body. It is this catchy phrase "to rest the kidneys" which has stuck in our memories and has been responsible in part for the common tendency to restrict the fluid intake when kidney insufficiency is suspected.

Undoubtedly there are cases in which a moderate restriction of fluid may at times be desirable but when we consider the laws which govern renal excretion we must be impressed with the fact that renal cases which can be benefited by fluid restriction are rare indeed, and that in the majority of instances the measure will be actually dangerous. Let us consider these laws for a moment.

There is a limit to the kidney's ability to concentrate in the urine the substances which it excretes. For example, the normal kidney cannot excrete urea in the urine at a concentration of more than 5.6 per cent, and this percentage is reached only under very unusual conditions. As a rule the concentration of urea in the urine formed by normal kidneys does not reach 4 per cent, and it is much lower than this in most if not all types of renal insufficiency.

What is true of urea applies in principle to the other substances which are known to be excreted by the kidney and in all probability to those as yet unrecognized substances which may be responsible for the production of hypertension and albuminuric retinitis.

If there is a known limit above which the kidney is unable to concentrate the urine, then it is evident that the least amount of urine which can carry off a known amount of any substance can be determined. For example, the body forms about 30 grams of urea each day which, under normal conditions, must all be excreted by the kidney. If the concentration of urea in the urine does not exceed 5 per cent, then at least 600 c.c. of urine per day is necessary to rid the body of this material. In other words, if the urea production remains normal and no adventitious excretion of urea through the bowel or skin occurs, then, if the urine is reduced as low as a pint in the 24 hours some retention of urea and probably of other nitrogenous substances will take place.

Such a retention may be of little or no importance if conditions are restored to normal within a few days. But if allowed to persist, then the cumulative action of the retained products of metabolism may be very harmful.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

It is probable that such a retention rarely occurs in the normal individual as a result of restricted fluid intake. Even though little liquid is taken as such, there is so much water in foods that the body as a rule receives enough to meet its minimal requirements from this source.

However, when kidney insufficiency is present this matter becomes of much greater importance, for with many types of renal disease the ability of the kidney to concentrate in the urine the nitrogenous substances, such as urea, is greatly impaired, and it follows that the lower the concentration power of the kidney the greater the amount of urine which will be needed to carry off the urea and other bodies and the greater the amount of fluid intake which will be necessary. If the kidney can raise the urea to only 2 per cent in the urine, then 1,500 c.c. of urine will be required to carry off the 30 grams of urea formed daily in the body, and if this concentration percentage is cut in half then the fluid needs are doubled.

It is in chronic nephritis with hypertension and without edema that this matter applies most clearly. In such cases the ability of the kidneys to concentrate is progressively more and more impaired and the need of a high urinary output and high fluid intake increases proportionately. These are the individuals familiar to you all, with polyuria, often with thirst, and as a rule emaciated from loss of fluid.

These patients show a tendency to some nitrogen retention and to uremia, even despite our best efforts in maintaining adequate fluid intake. But the nitrogen retention becomes serious and uremia imminent if there is any interruption of the fluid supply or if much fluid is lost from the body by diarrhea or excessive sweating. Such patients are sometimes thrown into uremia by injudicious catharsis or diaphoresis. It is true that catharsis and diaphoresis are often very helpful in the treatment of chronic nephritis without edema, but only if fluid is freely administered to replace the water lost through the bowel or skin. In such cases of chronic nephritis two quarts of water each day is probably a minimum, but greater amounts may have to be given if the necessary quantity of urine is to be formed, and really large amounts may have to be given if much fluid is being lost by bowel or skin.

In chronic nephritis with edema one is even more tempted to neglect to maintain a free fluid intake and it is true that for a time one may obtain a higher output of urine with a low fluid intake. It is, of course, the urinary output which is the important matter and each case will have to be a law unto itself, but remember that such patients, even when quite edematous, cannot continue long to excrete a satisfactory amount of urine if the fluid supply is kept very low. And also remember that fluid which is taken in but not excreted will, up to a certain limit, do no harm and will at least dilute in the body any retained toxic substances. From this point of view at least, too much fluid is safer than too little. It is perhaps due to this dilution of toxic substances in the body that uremia may be so long delayed in cases of acute suppression.

The indications for a plentiful supply of fluid are even more clear in acute nephritis and a free fluid intake should be the invariable rule. The fluid reduces the toxicity of whatever substance, chemical or bacterial, may be still continuing to injure the kidney and the fluid will also assist the kidney in performing its functions normally. Even if edema appears, it is better not to lower the intake of fluid. It is in these acute cases that the pediatrician has demonstrated the value of the milk diet which, while low in nitrogen-containing matters, still supplies a large amount of water.

The earlier in an acute nephritis that the free supply of water is instituted the better, and it is probable, if large amounts of water were routinely administered to patients with those infections which we know tend to be complicated by kidney disease, that many instances of renal damage could be avoided or at least the degree of kidney injury lessened. All febrile conditions fall in this group to a greater or less extent, but among the infections which should be especially considered in this connection are not only such serious ones as scarlet fever, the relationship of which to kidney disease is firmly rooted in our medical minds, but such apparently trifling ones as tonsillitis. Recent observations which I have made of the urine in tonsillitis show the marked degree to which the kidneys may be irritated in even apparently mild attacks of tonsillitis in healthy young individuals. The importance of tonsillar infections in the production of kidney disease is being more and more realized, and prevention of nephritis seems to be possible both by the greater protection of the kidneys during acute attacks of tonsillitis as well as by the treatment of the local infection in the throat.

The question of the proper procedure in cases of hypertension does not belong in the present discussion, but it may be said in passing that despite certain unfavorable results reported by J. L. Miller and Williams,[1] opinion is becoming more and more favorable to the administration of considerable quantities of fluid. Miller and

Williams gave 10 liters of water daily for six days and observed an increase in the blood pressure. This amount of water is admitted by them to be excessive. Favorable results, on the other hand, are reported by Orr and Innes.[2]

If the hypertension is associated with chronic nephritis then the reasoning referred to earlier in this paper applies and even considerable amounts of water would seem to be indicated, but never in such quantities as Miller and Williams employed.

Nor are we concerned in this paper with such renal conditions as pyelitis, in which free fluid intake is well recognized to be of value, even if there is little or no associated kidney insufficiency. If kidney insufficiency, however, does complicate the picture, then the administration of water freely is even more clearly indicated.

I desire to emphasize, therefore, that there are very few kidney diseases in which there is any excuse for lowering the fluid intake of the body; and on the other hand, a free fluid intake is indicated and is beneficial in almost all instances of kidney insufficiency and kidney disease.

Lowering the water intake of the body does not "rest the kidney." On the contrary, it puts additional strain on the organ's most delicate and most frequently impaired function—that of concentration of the waste products of the body's metabolism from the blood into the urine.

This brief paper is a plea for the wider appreciation of these principles and for the free administration of fluid in almost all instances of kidney insufficiency or disease.

REFERENCES

1. Amer. Jour. Med. Sciences, 1921, CLXI, 327.
2. British Jour. Exp. Pathology, 1922, III, 161.

DISCUSSION

Dr. Roy R. Snowden (Pittsburgh): I am sure that I reflect the feeling of every member of this section when I congratulate Dr. Pepper on the clear-cut, sensible manner in which he has presented this very important point in fluid intake in nephritis. Dr. Pepper's scientific clinical knowledge is widely recognized; but, best of all, Dr. Pepper has a wealth of common sense which he draws upon freely in meeting medical problems. This makes his present paper one of special value to us, for probably in few conditions is the physician so in need of hard common sense as in the proper care of a case of nephritis, in view of our present limited knowledge of the real physiological mechanism of kidney activity. If we knew, actually, whether the excretion of water by the kidney was a process of filtration or active secretion, if we knew more accurately the effect on kidney function of transient or prolonged changes in blood volume or blood dilution, if we knew the complex effects of cardiovascular changes incident to fluid intake, we could then accurately determine the exact amount of fluid intake that would allow the optimum functional activity of the kidney in various stages and types of nephritis. But those are points that have not yet been definitely established. Hence the problem of kidney excretion is a very complex one, often confusing, because of the effects of concomitant conditions, and we must rely to a considerable degree on extensive clinical experience coupled with common sense. Because of these traits, Dr. Pepper's ideas are of especial value.

Dr. Pepper is especially anxious to bring us to realize the dangers of carrying to excess the idea back of some popular phrase. In his experience the dangerous slogan is the one "to rest the kidneys." In my own experience I have come equally to fear the expression of "flushing the kidneys," and have adopted the habit of warning against the forcing of water. I have seen many cases in which the ingestion of large amounts of water has raised the blood pressure, with resulting cardiovascular embarrassment and eventual further impairment of kidney function, the whole finally developing into a vicious cycle.

A case recently under observation illustrates this perfectly. A man of forty was instructed by his physician to "drink lots of water" and thereby "flush out the kidneys," because of the presence of albumin in the urine. This he proceeded to do with such enthusiasm that he was soon taking over 4,000 c.c. daily. In a few weeks he developed headaches, dizziness, ringing in the ears, and was getting up six to eight times at night to urinate. His blood pressure was 170 mm. His fluid was cut to 2,000 c.c. daily and in three days his blood pressure was down to 130 and his symptoms had all disappeared.

Those hearing Dr. Pepper and me talk independently might feel that we are at complete variance on this matter; but I am sure we stand on common ground, namely, that the fluid intake should be neither too great nor too small in nephritis. Great harm can be done by going too far in either "resting the kidney" or in "flushing the kidney."

I am sorry Dr. Pepper could not, in his allotted time, give us his ideas as to the amount of water that would give the optimum functional activity in the various types and stages of nephritis. The problem is a most complex one, the cardiovascular condition, the cardiovascular resilience incident to age, the imminence of uremia, etc., all entering into the solution of each case. In general, I am guided by the course of the blood pressure curve in relation to the condition of the heart, and the twenty-four hour urine volume and its specific gravity, in those cases where uremia is not impending. If uremia is imminent, drastic procedures are indicated; water is forced in every way and elimination aided. However, in the final analysis, every case presents its own complex problem and draws upon every resource of clinical experience and common sense the physician can muster. It might be well to cast aside the two slogans, "rest the kidney" and "flush the kidney," and adhere to the idea of giving enough water to meet the needs of the kidney—neither too much nor too little.

Dr. Joseph H. Barach (Pittsburgh): While I am unable to add anything to the admirable discussion of Dr. Pepper's paper, I do wish to emphasize one or two points and, if possible, to express them more concretely. In a meeting such as this, where valuable messages are brought to the practitioner of medicine, it is well that we give him practical working formulas, which he may use in his every-day work. Neither the practitioners of medicine nor their patients have yet come to the point where they ordinarily measure the daily protein or salt intake and output and the required amount of water to keep them in proper solution. If, therefore, we say to a patient, "With the diet that you have been advised to take, I wish to have you take two quarts of water daily," in the usual case of hypertension or nephritis we will be following a safe course. We will not commit the error of having our average patient habitually take too much water, and we will know that he is not taking too little water. In special cases where the tissues are dry, where there has been a prolonged oliguria, where the patient is toxic, in such cases special needs are met with special therapeutic efforts. We must generalize thus in our work, and whether we admit it or fool ourselves into thinking otherwise, we do so all the time.

I was very much interested in Dr. Pepper's discussion stressing the importance of the remote effect of tonsillitis upon the kidneys. Tonsillitis is such a common affection, and its irritating effect upon the kidneys is so frequent that it actually is a dangerous disease. As stated by Dr. Pepper, in tonsillitis large amounts of water should be administered. In this disease the fever, the toxemia and the renal irritation all indicate the need for large amounts of water.

Again I wish to express my appreciation of the value of Dr. Pepper's discussion and the great need of our actually putting into practice the principles which he elucidated.

Dr. John A. Lichty (Pittsburgh): The title of Dr. Pepper's paper is "The Importance of Fluid Intake in the Treatment of Kidney Insufficiency." I heartily agree with what Dr. Pepper has said in his paper, but I believe two points should be kept definitely in mind before advising a patient to drink water freely or *ad libitum*. One is, we should know whether the heart is compensating. If it is not, then I believe an excessive amount of water can very easily bring about considerable embarrassment. The other is, is there a salt retention? If there is salt retention with its consequent edema, the taking of more water without any attention to the amount of salt retention will lead to greater difficulties.

I am sure, aside from these two conditions, the indications for a free amount of water have been well established by Dr. Pepper's paper.

The amount of urine output is also a very satisfactory indication. It is a matter of common experience when the output of urine is up to the normal or above the normal, we feel more comfortable about our patient than when the urinary output is diminishing. I believe, therefore, that a moderate amount of water which will increase the elimination of urine is desirable in certain cases.

I am glad that Dr. Pepper has called our attention to the points which are covered in his paper.

THE BOUNDARIES OF GENERAL PRACTICE*

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The field of medicine is so broad that it is impracticable for one individual to attempt to do all the things included in it. It may be possible and was formerly done to a large extent by the practitioners of a few decades ago; but with the tremendous development in surgery and the great advances in medicine, together with the multiplication of laboratory tests, we find that the interests of society are best conserved by a division of labor and we have the development of specialists.

The development of a specialist is, however, a long and expensive procedure; consequently there must be an adequate return on the investment. This makes the employment of specialists entirely, while splendid in theory, impracticable for people in moderate circumstances.

An attempt has been made to popularize the practice of medicine entirely by specialists. We have the "Group" which flourishes particularly in the West, and we often see in the large cities rich families who have no family physician but depend upon the various specialists alone. But in all such combinations a correlative agency is necessary or at least desirable, and such an agent should be a physician with a great breadth of knowledge and wide understanding. Such an individual is usually an internist or a general practitioner of a high type.

Whatever the future of practice may be, whether we shall see an attempt made to develop group practice more extensively or some entirely different scheme, it is hard to see how we can get entirely away from the family physician. Group practice may flourish in the cities and towns of moderate size, but in the rural communities and smaller towns the general practitioner must be the medical integer. Now the question arises as to what he should undertake and what he should refer to others. The answer to that question depends much upon the general practitioner, his training, his age and his experience. No set rule can be formulated.

In an effort to clarify the answer to this question it would seem not inappropriate to examine in detail the work of a practitioner in the suburbs of a city, hoping that such a survey might stimulate some discussion, and help to decide just where the boundaries of general practice should be. So the work of one year has been taken as a basis. In this analysis the classification used in textbooks on the practice of medicine has been followed.

1. *The Infectious Diseases.*—It shows: two cases of typhoid fever, five of lobar pneumonia, fifteen of scarlet fever, three of diphtheria, fourteen of tuberculosis of the lungs, one of tuberculous meningitis, eighteen of influenza, two of pertussis, two of mumps, three of syphilis, three of gonorrhea, three of erysipelas, and three of focal infection.

It is of course evident that this group may differ very much from year to year. Typhoid is now a rare disease in the city and an epidemic is very rare. Influenza of course varies. The year analyzed was 1921, when our recent epidemic was on the wane. Measles was not seen in this year because in 1920 there was an epidemic in this community and all non-immunes contracted it. Scarlet fever and diphtheria are endemic in a large city with occasional outbreaks amounting to an epidemic.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

2. *Intoxications.*—In this group only two were seen, both alcoholism.

3. *Diseases of Metabolism.*—In this group four cases appeared, all diabetes.

4. *The Digestive System.*—Forty-five cases of tonsillitis, two of gastric ulcer, one of gastric cancer, three of achylia gastrica, two of pyloric stenosis in infancy, one acute catarrhal jaundice, one cancer of the liver, three of cholecystitis, five of appendicitis, one cancer of the cecum, five cases of constipation, eleven of diarrhea, two fistula in ano, two fissure in ano, and one ischiorectal abscess.

5. *The Respiratory Group.*—Here we have sixty-six cases of acute coryza, two of acute catarrhal laryngitis, one so severe as to require intubation, twenty-four cases of acute bronchitis, three of chronic bronchitis, one of pyopneumothorax, two bronchial asthma, one bronchopneumonia, three of hay fever.

6. *The Circulatory Group.*—Two cases of acute endocarditis, one subacute endocarditis, six chronic endocarditis, four mitral disease and two aortic. Fifteen cases of chronic myocarditis, two of angina pectoris, thirty-five of hyptertension, one of congenital heart disease, two of embolism, one cerebral, one pulmonary.

7. *The Urinary Tract.*—Eight cases of pyelitis, three in adults, five in children, three of nephrolithiasis, seven of chronic nephritis, one of acute cystitis, one of chronic cystitis, one of hypertrophied prostate.

8. *Blood-Making Organs.*—One case of Hodgkin's disease, six of secondary anemia of undetermined origin. They were all women and all had painstaking examinations without revealing the cause of their trouble.

9. *Diseases of the Bones and Joints.*—One case of acute osteomyelitis, two of acute traumatic synovitis, six of arthritis, two of arthritis deformans, two of sacro-iliac sprain, three of myositis, three of painful back of undetermined origin and one of metatarsalgia.

10. *Diseases of the Ductless Glands.*—Here we have four cases of goiter.

11. *Diseases of the Nervous System.*—Five cases of apoplexy, one of paralysis agitans, two of herpes zoster, two of epilepsy, five of menopause, two of insanity, one angioneurotic edema, five of neurasthenia. (The diagnosis of neurasthenia is a dangerous one, but all of these patients had been under observation for years, had been carefully studied from various angles and had never shown any real disease.)

12. *Diseases of the Ear.*—During the year under consideration there were treated ten cases of acute otitis media, three of chronic otitis media and one patient was referred for a mastoid operation. A number of patients were treated for impacted cerumen.

13. *Pediatrics.*—All the scarlet fever, diphtheria, chicken pox, mumps and pertussis seen were among children. Tonsillitis, colds, bronchitis and pyelitis are found more frequently among children than among adults. Twenty infants were artificially fed during the year and two infants suffering from pyloric stenosis were treated. One child with acute osteomyelitis was seen in consultation and one infant was born with a sarcoma of the axilla.

14. *Surgery.*—Here the work done by the family practitioner is generally minor. In the year under consideration were treated thirteen boils, two carbuncles, five infected fingers, three infected feet, two sebacous cysts, three injuries to the hand. There were done three circumcisions, three paracentesis abdominis, five paracentesis thoracis, one removal of wen, one abscess of the breast. There were six sprained ankles, one intracapsular fracture of the femur, one of the surgical neck of the humerus, one of the finger, one of the base of the skull, one subcoracoid dislocation of the humerus, one of the acromion. Three inguinal hernias, one varicose ulcer and one case of varicose veins were seen. There were referred three appendectomies, one cholecystectomy, one ischiorectal abscess, one foreign body in the knee, one tumor of the breast, eight tonsillectomies and one mastoid operation.

15. *Gynecology.*—Two cases of acute gonorrheal salpingitis, one of chronic gonorrheal salpingitis, two of carcinoma of the ovary, and two with partial prolapse were fitted with pessaries. Four patients were referred for plastic operations, two for the application of radium, and three for hysterectomy for fibroid.

16. *Obstetrics.*—Thirty-two maternity cases were attended and eight miscarriages, two requiring curettage. In the maternity work forceps were used three times, version once and there was one breech birth. One hydrocephalic child was delivered without difficulty, and one woman was delivered who had a severe mitral stenosis. Three patients had mild toxemia of

pregnancy and two were referred for cesarean section.

From a survey of the foregoing it is quite evident that the major part of a general practitioner's work is medical, assuming, as I think is justifiable, that there is not much variation in different communities. He treats, with occasional consultations in difficult cases, all the work ordinarily classed as medical. He does minor surgery, including simple fractures. He does obstetrics with the exception of cesarean section, and he does nonoperative gynecology. He treats all medical cases among children and superintends their feeding and care. He refers all general and gynecologic surgery, all refractive and opthalmoscopic work, all special surgery and x-ray work. Laboratory work is done by an assistant.

General practice, as will be seen from this summary, has many features to attract and some to repel. A great deal depends upon the temperament of the individual. To some, the long hours and consequent lack of opportunity for study and recreation, the petty annoyances, the trivialities complained of, are great deterrents. To others the great breadth of the field, the wide variation in the things seen and studied, are decided attractions. Everyone likes to do the things that he does well and specialism offers an opportunity for the acquisition of great skill. But in general practice, by close application and the utilization of every opportunity, one may acquire great skill in physical examination and diagnosis. The field is there and can be cultivated.

The position of the general practitioner in the home is a great attraction to many men. The physician is the most intimate friend of the family, and is in closer touch with the domestic circle than any outsider. The respect which is his more than counterbalances the petty annoyances to which he is subject. In many communities he is the most influential and important man to be found. Much has been written of the disappearance of the family physician. He has not disappeared but has changed. The practitioner of the previous generation, with his scanty training, his careless examinations and inexact methods, is passing, and in his place we have the man of broad training who will practice medicine in a much more exact and scientific way and who will, we hope, serve his fellows better than in the past.

The question naturally arises as to the training of the medical student expecting to enter general practice. He should have, of course, the best general and professional education possible. Then he should have one year at least in a general hospital with especial attention to the medical, obstetrical and childrens' wards and to the laboratory. Surgery he should attend to, of course, but not as assiduously as to the others. If he is to practice in an isolated community he should know surgery much better than if he is to practice in a city, for he may be obliged to do considerable of it, but in the larger cities it is better to leave it to men who are especially trained for such work.

In many cities and towns of this country we see men who are engaged in general practice who are striving to become specialists. This is a laudable ambition and should be encouraged. Many individuals realize what they wish to make their life work only after some experience in practice. With the development of postgraduate schools it is now quite possible for such men to perfect themselves in their chosen field. With the additional training they become more useful to their communities and bring to the door of their patients a service that formerly required a visit to the metropolis. Their experience in general work is of distinct advantage and gives them a much greater breadth of vision.

The postgraduate training of a man devoting himself purely to general practice should be along the lines of internal medicine, obstetrics, pediatrics and the laboratory. It is here that his widest sphere of usefulness exists and he should strive to become as proficient as possible in these subjects. Occasional visits to the large medical centers, with courses pursued in these branches, will keep him abreast of the times, stimulate him and renew his enthusiasm. His work may be less dramatic than that of some of his professional brethren, but if it is well and efficiently done he has the enduring satisfaction of being of great use in the world and of rendering a service that his community could hardly do without.

160 Carpenter Lane, Germantown.

DISCUSSION

Dr. Charles H. Miner (Wilkes-Barre): Dr. Ullom has told us that modern clinical medicine embraces such a vast field of knowledge that it is beyond the power of any individual to acquire the necessary skill to practice efficiently in the whole field of medicine. As professional knowledge and skill increase, laymen gradually become aware of new possibilities of diagnosis, of treatment and of prevention. People are, then, beginning to demand a variety and complexity of medical, surgical and laboratory services unknown a few years ago. Modern medical and surgical technique is full of difficult and delicate tasks; and diagnostic and therapeutic methods require long practice in their application before accuracy and speed can be attained. If we are to supply the public with methods of work made available by modern science, we must in addition to the general practitioner have the coöperation of experts in more limited fields.

The trend toward specialization at the present time is quite rapid and the importance of the specialist may be exaggerated to the detriment of the general practitioner. Dr. Frank Billings has recently stated that: "Based on long experience in consultation and in general hospital and private practice, it is my opinion that a correct anatomic and functional diagnosis can be made in from 80 to 85 per cent of all patients of an average community by a qualified, industrious, painstaking general practitioner by the sole application of the trained mind, the special senses, the hands and an always available simple laboratory equipment." The good general practitioner is needed more than ever before. Patients may, through their own initiative, seek out specialists who are not needed by them at all. In the obscure and difficult cases in which specialists are desirable the general practitioner should be associated with the specialist in the care of the patients.

There are services a family physician can render his patients and the public that are not fully appreciated and made use of. He should be the leader in the community in preventive medicine and public health work. He should urge those past middle life to be examined physically at intervals of one year at least in order to discover incipient impairments. It is generally conceded that mortality up to middle life has decreased and that the average age of man at death has gradually increased, due to better treatment and control of communicable diseases. But it is true that past middle life there has been a gradual increase of mortality, due especially to more rapid degeneration of the cardiovascular and renal systems. Early diagnosis is of the greatest importance in degenerative diseases, and just as important is early treatment.

The family physician should take more active interest in the improvement of housing conditions, milk supplies and the general nutrition of children. He should take an active interest in the work of local boards of health. He should educate the people in an effort to promote the campaign against infant mortality, cancer, tuberculosis and venereal disease.

Dr. J. Quincy Thomas (Norristown): We are all greatly indebted to Dr. Ullom for his very able presentation of this paper, which relates to the general practitioner. Any one who has followed general practice for any length of time can appreciate thoroughly the thought in this paper. The doctor's citations of the many complex and interesting cases which he diagnosed were very interesting. I do not believe there is any class of men in the universe less appreciated than the country doctor or the general practitioner. We do not see any buildings or monuments ever dedicated to the general practitioner or country doctor. They go through all kinds of weather, over all kinds of roads and at any time during the day or night to render *service*. They do not only give their *service* but many times give their lives. A great many die early from cardiovascular disease just as Dr. Fussell died. Dr. Fussell gave his life to his patients; the general practitioner does the same thing, yet they pass on and there is little or no thought given to them.

The doctors might be likened to the ancient Greek relay runners who had to protect the light they carried and hand it on to their fellows. The seeker after victory in any department of human activity is a torch-bearer, he not only has to preserve the light of his spiritual illumination but he must pass it on to others. So the true physician in a community is truly a torch-bearer.

It is true we have no buildings or monuments dedicated to the general practitioner, but after all, I think we should feel proud of the fact that out of the country practitioner has grown the greatest institution of its kind in the world, whose contribution to medical science and literature cannot be estimated. I refer to the Mayo Clinic. Any one visiting this great institution is at once impressed with the Christian atmosphere surrounding it. Rockefeller has given millions to a wonderful institution. While Rockefeller has endowed this institution many times and with many millions, I do not believe he had to make any great sacrifice to give this gift. The combined charities of the combined practitioners of the United States would no doubt equal or exceed the amount given to this institute. These charities cannot be estimated in dollars and cents. If it were possible to capitalize the amount of service given by the practitioner to the poor in the United States it would far exceed that given by Rockefeller. The practitioner gives his all; he gives his life—a life of sacrifice and unselfish service. "He profits most who serves best." This law is as universal in its operation as the law of gravitation.

I feel when the day comes for these men to pass on and step from the known to the unknown the Great Physician of all physicians will guide and direct them, saying, "Well done, thou good and faithful servants."

Dr. Lee M. Goodman (Jersey Shore): I am very proud to be known as a general practitioner. I have never in my life been very strong for the self-adulation some of us are inclined to pour out upon ourselves for our hard life. I think all of us are very much inclined to feel that what we get out of life is what we put into it; that if we do not give we do not get. It has always seemed to me that there was nothing too hard to do that meant the relief of pain to some poor, suffering individual.

I am very heartily in favor of hastening the time when the general practitioner shall come back again in the community to the standing, or the estimation, in which he once was held. It seems to me, with the rapidity of life and the way our civilization has grown to-day, that we are inclined to look too much upon the specialist, and the practitioner is not as self-reliant as he used to be. He is inclined to stop, rather than to look and listen. He stops because he thinks that someone with better knowledge in the field can make the diagnosis more rapidly, and he fails himself because he does not look and listen.

I believe that no class of men in the world does the good that the good general practitioner does. And though I do not believe in self-adulation, yet nevertheless I feel that the community will come back to the thought that no one lives who does half so much good as the old country doctor.

Dr. O. Pine queries:—Why does not some keen searcher for the new discover a malady which can be labeled medicamentosis, and which can be precisely mensurated by an elaborate congeries of rubber tubing, valves, cutoffs, pressure bulbs, connecting links and mercurial indicator which can be labeled medicamentimeter, which can be operated only, hearken ye, by one specially skilled in the mysteries of the same who may be labeled medicamentimetrist?

SOME OBSERVATIONS ON ORBITAL GROWTHS; REPORTS OF THREE CASES*

WILLIAM T. SHOEMAKER, M.D.
PHILADELPHIA

The frequent difficulty of accurate diagnosis in orbital cases, followed naturally by an uncertainty and a feeling of vagueness in determining treatment, is well shown in two of the three cases here recorded. Both of these recovered, but positive and absolute knowledge of the conditions present is decidedly wanting. The third case was frank and fatal.

Case I: M. R. A., age 21, college student. First seen January 29, 1917. Pain in and around the left eye, of six days' duration; no known cause. Lids slightly swollen; palpebral fissure a trifle widened; eyeball proptosed, with movements limited to temporal side. Pain was increased upon pushing the eyeball backward. The conjunctiva was clear; both pupils were equal and the irides reacted freely to light. Strange to say, diplopia was not complained of. Vision O. S. was 5/7½ but hazy; it dropped later to 5/35. Fundus examination showed a slight blurring of the disk at the temporal side. Macular region clear; vessels good. Subsequent examinations, made within the next few days, showed a definite neuritis, and an area of fundus elevation, well down and outward from the disk. This mound-like elevation rose to 7 diopters, or was about 5 diopters in excess of the general hyperopia. The overlying chorioid and retina were much disturbed, and the fundus below was markedly streaked. At the same time there was an increase in the other symptoms. Vision was reduced and the neuritis became more marked. There was some increase in the proptosis, more pain upon pressure of the eyeball, etc. The elevated fundus was shadowed in transillumination and was definitely outlined by perimetry.

Here we have, very briefly, a collection of symptoms and findings which were, to say the least, suggestive of what was most feared, but which also did not exist—malignancy. The onset of six days seemed to be too short and sudden for malignancy and materially weakened such a diagnosis.

Careful and thorough examinations were made by a number of skilled consultants, without, however, arriving at any positive conclusion.

Dr. B. B. Vincent Lyon reported on the blood as follows: Wassermann reaction negative. Hecht-Weinberg control negative. Hemoglobin, red cells and leucocytes normal.

In fact the only deviation from normal was a relative increase in the eosinophiles; this too was only moderate. In view of this, however, Dr. Lyon suggested that it might be well to exclude intestinal parasites and trichiniasis.

The x-ray examinations showed the lower margin of the left orbit depressed and forming a part of a confusion of shadows which appeared to make the uppermost portion of the left antrum much denser than the lower portion. The left antrum was clear throughout the lower portion, but there were well marked shadows in the upper portion. This would indicate fluid contents. All other sinuses were negative. Dr. Pancoast was of the opinion that the shadows in his plates represented a lesion in the orbit and not in the antrum, or at least connected with the floor of the orbit. This was important, as the advisability of exploring the antrum had been suggested.

Dr. George Fetterolf made several examinations of the nose and sinuses. He found the left nasal chamber congested, while the right was normal. No pus was present in the nose. By transillumination from the mouth both antra were absolutely black. By transillumination through the nose the left was black, while the right was fairly clear. Dr. Fetterolf made the tentative diagnosis, subject to revision, of an unusually thick bone forming the hard palate, and a possible solid growth of the left antrum.

Dr. de Schweinitz studied the case very carefully and, from his vast experience, recalled many cases with points of contact, and a number of possibilities were of course considered; but even so, a reasonably positive diagnosis could not be made.

The treatment was very simple and very effective. It consisted of mercury by inunction to the point of toleration, followed by potassium iodide in ascending doses; and at the suggestion of Dr. de Schweinitz, arsenic was administered with the mercury. This intensive course was started with the understanding that should the symptoms increase instead of abate, operation, either exploratory or definitive, would at once be resorted to. There was still a strong feeling on the part of some of the consultants that the trouble was malignant.

Recovery was rapid, complete and permanent. The patient now has a normal eyeball with full visual acuity. There still remains a very slight restriction of movement in extreme outward rotation. This is so slight that the patient suffers no inconvenience and it can only be elicited with considerable effort.

This case illustrates certain facts which are surely well known, but which also must never be forgotten.

First, in suspected but unproved malignancy, hidden to view, the patient is entitled to a thorough use of mercury before being subjected to surgical interference. The phenomenal advances made by laboratory and other specialists of various kinds, have had, I think, a tendency to usurp somewhat the field of common sense clinical observation, and hasten us toward action which may at times be premature.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

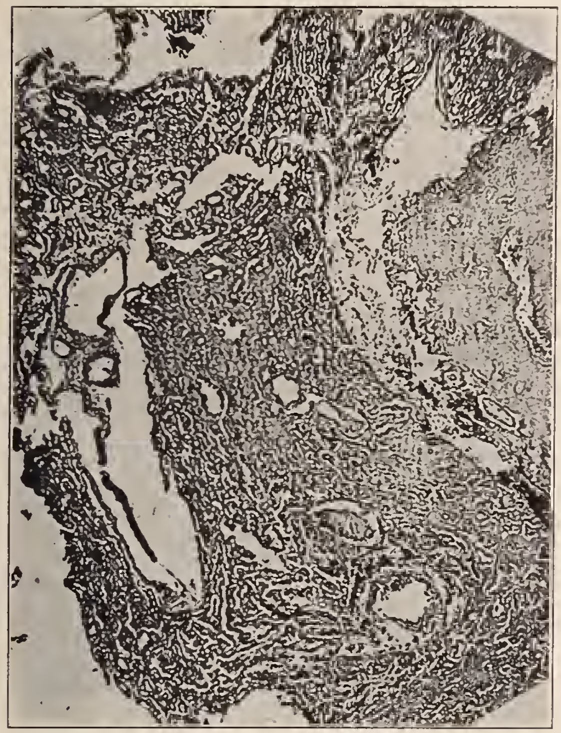

Fig. 1. Primary Tumor, Case II—Hemangioma or possibly Hemangio-Endothelioma.

Second, mercury has gained for itself such a wonderful reputation for its influence on syphilis that we are apt to forget that it is quite as wonderful as an absorbent in many other conditions. The fact that mercury cures is not proof that we are dealing with syphilis. There was no evidence that the case here reported was specific, and as a matter of fact, syphilis as a possible cause was placed at the bottom of the list.

The third observation to be made concerns the advisability of checking up on the returns, and holding off until we have sufficient agreement to warrant radical procedure. Invitations were received to exenterate, to enter the antrum and to enter the orbit, all of which had their academic merits, but none of which would have been particularly beneficial to the patient. The true nature of this lesion remains a matter of opinion. The practical results were very satisfactory; the scientific results were very unsatisfactory.

Case II: Hemangioma originating within the orbit of an infant 6 months old, and presenting at the inner angle of the base of the upper lid.

The diagnosis at first was questionable and necessitated the exclusion of meningocele or encephalocele, and also a careful consideration of the possibility of sarcoma. The case was, furthermore, complicated by an enlarged thymus gland, evidences of cretinism, an enlarged spleen, and other credentials for endocrinology. On the skin of the lid directly over the soft protruding mass was a small nevus which, of course, was suggestive. Dr. de Schweinitz kindly saw the case in consultation and felt that meningocele could safely be excluded; and as the tumor, for such it was, increased in size, was quite accessible and was unmistakably vascular, it was decided to operate. With the permission of Dr. Chas. A. Fife, the doctor in charge who supervised the administration of ether, a rather dangerous procedure in the presence of an enlarged thymus, the growth was extripated in the usual manner. The extripation was, at the time of operation, thought to be complete, but there was a recurrence within a few weeks. Sections of the original tumor here shown would seem to confirm the diagnosis of hemangioma, but recurrence, with a persistently enlarged spleen, suggested strongly the possibility of the second growth being a sarcoma.

However, the child's general condition steadily improved. A second operation was performed, and the recurrent growth, which had by this time extended along the entire base of the upper lid and which was larger than the primary growth, was thoroughly removed. Since the second operation there has been no recurrence, and a continued growth and more healthy development of the child.

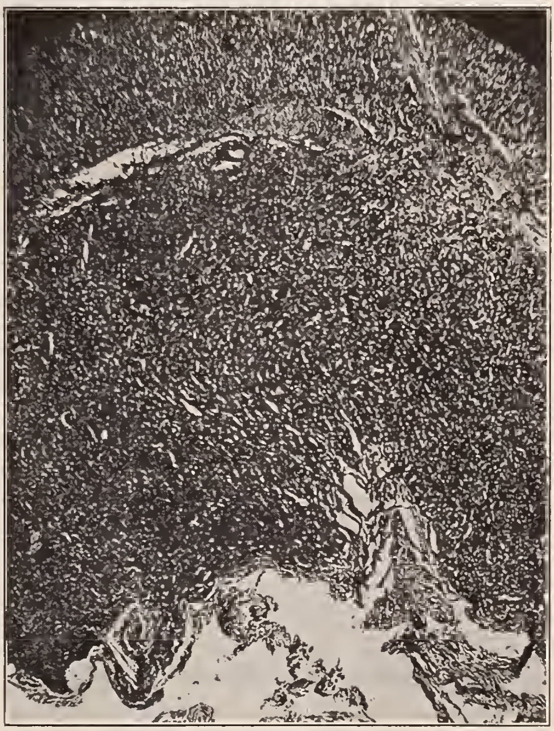

Fig. 2. Recurrent Tumor, Case II—variously diagnosed Hemangioma, Hemangio-Lymphoma, Hemangio-Endothelioma, Sarcoma, and Hemangioma passing into Sarcoma.

The second tumor was sectioned, and a comparison of the two tumors microscopically is quite interesting. Of special interest is the fact that the second and the more important tumor, even under the microscope, has a number of aliases.

Sections of both tumors were submitted to Dr.

Allen J. Smith, Dr. Jos. McFarland, Dr. Stanley P. Reimann, Dr. John Speese, and finally to Professor E. Fuchs, who, while in Philadelphia last winter, was good enough to study the slides and give me his opinion. Doctors Smith and McFarland felt that the second tumor showed sarcomatous changes, and that the growth was, so to speak, just passing into sarcoma. Dr. Reimann thought that the second tumor was sarcoma. Dr. Speese reported that he regarded the process as an hemangio-endothelioma, the degree of malignancy being more pronounced in the specimen removed at the second operation. And finally, Professor Fuchs thought both tumors were hemangiomata. He regarded the process as not malignant, and said that he could not see in it sarcoma. He furthermore emphasized the fact, that in his judgment, both were hemangiomata and *not* lymphangiomata.

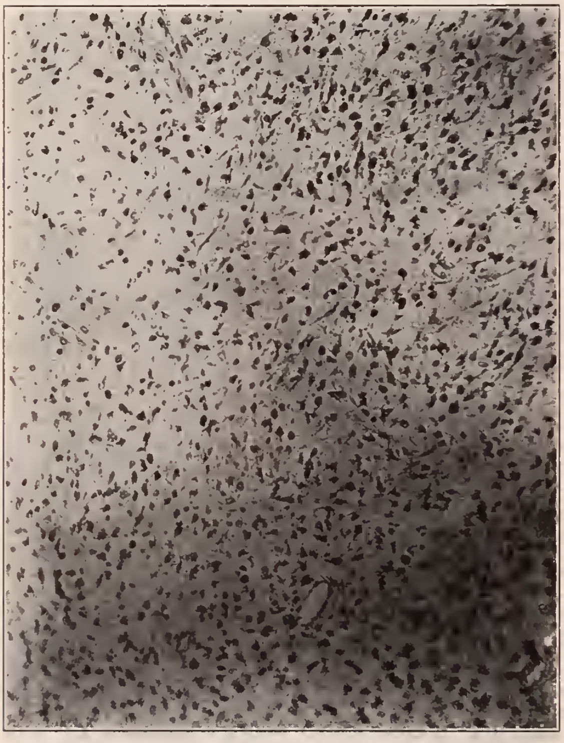

Fig. 3. Case III—Myxosarcoma.

The uncertainty of the true nature of many orbital conditions, as these two and many other cases show, is quite sufficient reason for a very careful and guarded study of all such conditions.

I would also comment somewhat on treatment. In view of the fact that a thymus child is a bad risk for general anesthesia, many of them dying promptly under administration, the use of radium was discussed from several angles. The enthusiastic expert expressed his belief in its safety, its certainty of action, and its positive indication. The time may come when such will be the case, but in my opinion radium is too powerful an agent, as yet not under sufficient control, to introduce close to a perfectly good eyeball, unless of course the possible loss of the eyeball is not to be considered. An accessible growth, undiagnosed as to malignancy, should, I believe, when the time comes be approached first surgically rather than risk the damage that radium can cause. And in the orbit, especially, I feel that the use of radium belongs only to a few experts. It should be used but not tried. In other words, beware of the man who wants to *try* radium. I am well aware of the bad results which often follow surgical interference with a sarcoma where the growth is cut into and not completely removed; but with a diagnosis not established, I must object to the introduction of radium tubes to see what will happen.

Case III: This case need not be reported in detail. It is introduced only for the purpose of pathological comparison with *Case II*, and of showing what radium did and also what radium failed to do. It was indeed a sarcoma from start to finish, in the orbit of a boy 7 years of age.

After a full discussion of the pros and cons I decided upon surgical intervention and removed a fair-sized encapsulated sarcoma. X-ray treatment followed. Six weeks after operation, recurrence was noted, and as usual in these cases, the process was decidedly active. Then followed a remarkable performance on the part of radium. The growth was mostly in the floor of the orbit, well forward. Four radium tubes were introduced by Dr. Newcomet directly into the tumor and allowed to remain for 12 hours. Within a week practically all signs of swelling had disappeared. Such encouragement was of four months' duration, during which time the skin of the lower lid softened and the proptosis diminished, and it seemed that possibly a permanent cure had been effected. Not so, however. The process again became active and belligerent, and

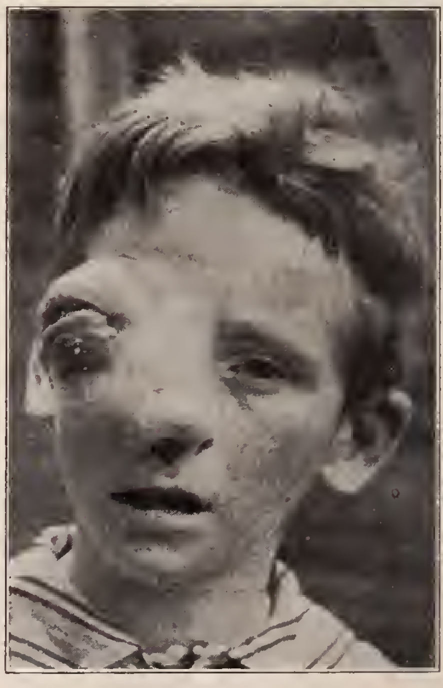

Fig. 4. Case III—two months before death.

defied any and all interference. The use of radium was abandoned by Dr. Pancoast and surgical relief was impossible.

The question remains, would the final result have been different had radium been used primarily instead of the knife. I refused at first to use radium, against the advice of three eminent specialists, but in my opinion, no power on earth can stop a sarcoma in the orbital tissues of a child.

The duration of the case was 14 months. At no time was there pain, and the terminal stages lasted about 3 months.

PATHOLOGICAL REPORT BY DR. STANLEY P. REIMANN

Case II, First and Second Tumors (a, Hemangioma; b, Hemangio-Lymphangioma): Both tumors are essentially alike. The one removed first consists of a mass of spaces lined by a single layer of endothelium. Most of the spaces contain blood cells; a few are empty; and a few contain amorphous and granular debris. The spaces are fairly uniform in size and are separated from each other by thin partitions of connective tissue. The general architecture is that of a group of these spaces well and sharply outlined and separated from another group by a denser and thicker band of connective tissue. The second tumor shows very few spaces and they are very small and contain only a few red blood cells. The groups are not so well separated and outlined and appear more invasive. The tissue is very highly cellular, the cells having dense nuclei and little cytoplasm. Making allowance for the possibility of compression, it appears that many more cells are present than would be accounted for by that possibility; but in addition, their nuclei are much denser and the cells appear more active.

Case III, Myxo-Sarcoma: Five sections from various places show identical structure. It is a highly cellular invasive tumor which has replaced and invaded the orbital connective tissue. The general architecture is hemogenous, and consists of small cells imbedded in a very loose framework which in many areas cannot be distinguished by hematoxylin and eosin. In certain areas the cells are typically "combed" but not around the vessels or other structures. The cells themselves are typically stellate with very densely stained nuclei. Tiny fibrils trail off the points of the cells in many instances. Mitotic figures are sparse, but can be found with little search. In some areas the cells are very closely packed and lose their stellate shape; in others they are widely separated by a very light blue staining amorphous matrix. The older vessels of the invaded tissues seem normal. The tumor itself has few capillaries with definite walls, but scattered red blood cells are seen among its cells.

DISCUSSION

Dr. Geo. H. Cross (Chester): Inasmuch as Dr. Shoemaker has confined his paper to personal observations on orbital growths, it is fitting that I should add to it from my own small experience in this field, so will relate first the interesting features of an unsuspected melanosarcoma of the choroid projecting backward into the orbit, wrongly diagnosed as a case of simple glaucoma.

Case 1: Mrs. D., aged 65, following several attacks of intense pain in her right eye, was operated upon October, 1920, a corneoscleral trephining being performed. Later she consulted me, and on account of her age, the intense pain, lack of light perception and the condition of the globe, enucleation was advised. At the time of the operation, before severing the nerve, a tumor mass about the size of a large pea was discovered on the posterior wall of the globe close to the nerve. All damage to the growth was avoided by reaching well back when cutting the nerve. As a result of the microscopic examination the tumor was classified as a melanosarcoma with unusual metastasis to the trephined area. A short time later there developed a general sarcomatosis with fatal results.

Remarks: A careful study of the family history in this case, which revealed numerous definite malignant members would necessarily have influenced the first operative procedure. This case is very instructive in that it demonstrates the necessity of the careful consideration and ruling out of malignancy before operating upon an eye with increased tension.

Case 2 is that of a melanosarcoma with secondary growth in the orbit treated with a large dose of radium, 50 mg. for 12 hrs., preceding exenteration of the entire contents of the orbit including the periosteum, followed by a second radium treatment and no recurrence until 1½ years later when the submaxillary glands became enlarged. They are now under treatment with deep x-ray and radium. In this case it is regretted that radium was not used before the removal of the eyeball with the choroidal sarcoma, this being done one year prior to the exenteration.

Dr. Shoemaker is to be congratulated on his complete and exhaustive study of these cases and his ability to gather round him such a splendid coterie of consultants. His observations are very timely and are a very forceful reminder that one can be over zealous in the use of the more or less unknown and untried methods of treatment, to the neglect of some of the old and tried standbys that are still the best in effecting a cure.

No doubt some will disagree with Dr. Shoemaker's statements, for example in the second case, when he says, "An accessible growth undiagnosed as to malignancy, should, I believe when the time comes, be approached first surgically rather than to risk the damage that radium can cause." To this statement I cannot subscribe, feeling that it is safer to render inert with a treatment of radium any cells from a tumor mass that might have wanderlust and possibly in a different medium produce a malignant growth. Pathologists tell us that benign growths under certain stimulation become malignant.

THE RELATION OF ORBITAL AFFECTIONS DUE TO NASAL CONDITIONS*

SETH A. BRUMM, M.D.
PHILADELPHIA

The subject of Rhinology is one of the oldest branches of medicine with which we have to deal, "for we learn as far back as the Old Testament, that when God made man out of the dust of the earth, that he breathed the breath of life into his nostrils," and even as early as one hundred years ago, Beer says in an article on vicarious blindness from suppression of snuffles without evidence of mucous or pus in the sinuses that the recognition of this form of amurosis is greatly facilitated by a history of severe and sudden cold in the head immediately preceding the ocular complications, and that marked improvement is facilitated by reëstablishing a copious discharge of mucous from the nose. Which, by the way, brings to our recollection the early uses of rhinogoges as, snuff, etc.

The work of Tyrman and Berger in 1886 is quite familiar to us all, on to the work of Stark in 1915, when he reported some 88 cases from the literature, to which number has been added, through the untiring efforts of men like Onodi, Sluder, Holmes, Van der Hoeve, Halsted, Beck, Skillern, Bordley, White and others. So my apologies are many and my temerity most marked for bringing this subject before the section, yet from the small experience that I have I cannot help but feel that the propaganda should be continued, and that many of our rhinologists and ophthalmologists, either from extreme conservatism or ignorance, are missing many of these types of cases.

I will spend but a brief time on the anatomic relation of the optic nerve with the sphenoid and the ethmoid sinuses, but simply quote Onodi's words. He says, "For ten years I have been investigating the most delicate construction of the accessory sinuses and their relation to the optic nerve, which observations have shown that the wall between the last ethmoid cell and the canalis opticus is nearly always as thin as tissue paper. Dehiscences in the wall of the accessory cavities have been found, where the diseased mucosa may come into direct contact either with the dura mater or the membranes about the optic nerve."

Loeb says: "Where the posterior ethmoid cell replaces a portion of the sphenoidal sinus, the optic nerve runs close to and along the external wall of this ethmoid cell and its vulnerability is correspondingly heightened in view of the greatly increased portion exposed."

Citing Dr. Schaeffer's beautiful work, he says: "The optic nerve is so far removed from the paranasal sinuses that very intimate relationship is precluded by the intervention of a considerable mass of orbital fat for a considerable distance from the eyeball. *However,* as the optic nerve approaches the orbital apex and passes through the optic foramen to the optic commissure, a very *intimate* relationship exists between some of the paranasal sinuses and the nerve and its commissure."

PATHOLOGY

I know of no better classification than: 1st. Orbital affections due to extension of actual pus from purulent sinuses. 2d. Orbital affections due to septicemias and bacteremias. 3d. Orbital affections due to hyperplasia of the sinuses. This latter is subdivided into, hyperplasia with sepsis and hyperplasia with pressure.

The actual extension of pus from the nasal structures is an old and well understood entity. Likewise we are becoming more familiar with orbital affections in relation to general sepsis and bacteremia, which knowledge is fast erasing from the nomenclature the words gout and rheumatism as applied to these eye conditions. But the third or hyperplastic type of sinuitis is not well understood and to my mind is by far the most important, because of its insidiousness and the fewness of the subjective and objective symptoms, also the lack of gross and microscopical pathology.

ETIOLOGY

In considering the causative factors of orbital involvement I want it thoroughly understood that we are not considering those types due to systemic conditions, as syphilis, pituitary disease, intracranial lesions; focal infections, such as septicemias, bacteriemias, etc., but those which have to do with hyperplastic sinuitis.

The predisposing influences are deflection of the nasal septum, especially opposite the middle turbinate, the size and position of the middle and superior turbinates, the lack of the provision for drainage and ventilation; all of which I thoroughly believe causes an intrasinual pressure, which causes a chronic congestion, followed by hyperplasia, especially of the basement membrane, eventually blocking the posterior sinuses. Then infection may or may not take place, causing an inflammatory process which is generally exudative but *rarely* suppurative.

Up to this point in etiology I have simply stated the pathological physiology of the sinuses.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

Now, because of this, swelling infiltration spreads by continuity to the tissues of the optic nerve and its meninges.

Quoting from Dr. Schaeffer's work, "In this connection one must not forget the tissue spaces and their relation to the lymphatic capillary network of the sinuses, mucoperiostium on the one hand and to the meningeal spaces about the optic nerve on the other."

The lymphatics of the bone occur in great abundance in the periostium, and as perivascular spaces, penetrate the canals of Havers and Volkmann. In the marrow, perivascular spaces are abundant and the cancellous bone between the compact strata becomes greatly reduced. Indeed at times it is wholly wanting owing to the extreme thinness of the walls of the paranasal sinuses. From the anatomic point of view it would seem that an edema or swelling of the optic nerve would early lead to pressure on the component neurons in the canalicular segments, owing to the unyielding osseous canal through which this portion of the optic pathway courses.

Nerve head manifestations, owing to stasis and pressure (remember not sepsis or infection), would appear certain, and it would seem very reasonable to suppose that in these cases a draining back from one tissue space to another or invasion of contiguous spaces ultimately would involve the epidural and the intimately related portions of the optic pathway.

This work of Schaeffer's would seem to account very readily for that type of optic nerve involvement, which I should prefer to call *optic nerve compression* rather than optic neuritis. Also it would account for the extreme, yes almost magic recovery of these cases, such as the one reported by Sluder, where the patient regained some sight when he was doing the operation; the cases of Bordley, which showed marked improvement twelve hours after operation; and in my own experience, a patient with almost complete loss of vision who had a return of 4/5 vision three days after operation.

SYMPTOMOLOGY

Nasal Findings

Subjective: Many of your cases will give a history of recent coryza or a prior influenza, few will give a history of an old intermittent rhinitis, associated with severe headache, but remember *not* a mucopurulent discharge from the nose.

Objective: Previously I stated that the findings were not many, but by this I did not wish to convey that there were no nasal findings. True we must not expect to find the common symptoms of sinus infection, as pus, polyps, or a necessary history of nasal discharge, etc., as we are dealing, in this instance, with a closed sinus. But we do have the deflected septum firmly pressing against the middle turbinate.

Eye Findings

Subjective: Headache seems to be associated with all these cases, also pain about the orbit, pain in the orbit, itching as though it were in the center of the orbit, blurring of vision, and even complete loss of sight and color impression.

Objective findings are: Conjunctivitis, choked disc, engorgement of retina, loss of color field, and the characteristic symptoms of iritis, uveitis and retinitis, etc.

I will not prolong my paper with the citation of many cases, except to give a few examples of those types due to hyperplastic sinuitis without sepsis and those with sepsis.

SERIES 1

Case 1: I will simply read the report of Dr. Charles Heed:

"My examination of your case is as follows: Pupils 5 mm., equal, reactions sluggish. The palpebral conjunctiva indicates a chronic simple conjunctivitis; otherwise the anterior ocular segment is healthy. Fundi: R. E., media clear, disc margins clear, central cup, temporal portion presents a pallor, veins moderately full. No other abnormalities. L. E., media clear and eye-ground appears healthy. The enclosed field of vision and the enlarged blind spot are suggestive of pressure which was evidently removed by your treatment."

Case 2: Eye report by Dr. Langdon:

"This patient was seen first July 13, 1922, complaining of blurring of vision of the left eye. The vision of this eye was 5/12 and there was a small central scotoma for red and green. The diagnosis was retrobulbar neuritis."

(You will notice there were no acute inflammatory processes evident.)

SERIES 2

Case 1: Eye report by Dr. Langdon:

"This patient came to me complaining of inflammation of the left eye. She was first seen July 19, 1920, the diagnosis being iritis. Later the right eye also became involved. A physical examination showed no cause except inflammation of the accessory sinuses of the nose."

Case 2: Eye report by Dr. Langdon:

"This patient was seen first June 1, 1921, complaining of soreness of the left eye for six days preceding. The diagnosis was uveitis of the left eye, the vision being 5/60 of normal, improvement in this eye was first noticed on July 5th, and on July 15th the vision had improved to normal, and on July 29th the eye had quite recovered."

TREATMENT

Of course local measures may be used, as shrinkage of the turbinates and use of vacuum, but a word about local treatment: be sure your patient is being watched most carefully by the ophthalmologist, as immediate operation may be quite imperative.

Surgical treatment: correction in straightening any deflections of the septum, turbinectomy, ethmoid exenteration and sphenoid aëration.

In the hyperplastic types with infection I most certainly advocate the usage of autogenous vaccine.

Now a word about vaccine: I believe there is a distinct indication for vaccines, especially the autogenous vaccines. If one is to be a specifist, autovaccines are certainly indicated; if one is not going to be a specifist, why use vaccines at all?

We all know quite well that different organisms lend themselves to varying degrees of antigenic power and the enthusiasm of success is often relative to the organisms we have to deal with. For instance, the colon group, the typhoid, the paratyphoid, the staph. aureus are groups which lend themselves to high antigenic properties. Even if the organism lends itself to low antigenic properties certainly an autogenous vaccine is indicated instead of stock vaccines. If there is no indication for specificity why not inject your patient with milk protein, or egg white, etc.? One cow would produce enough protein for the whole country and the clarion tones of a few cackling hens would spell devastation to the great army of infecting bacteria.

X-RAY

This is a very timely place to say a few words about the x-ray. I regret very much, just as my conferes the roentgenologists, that it is not possible to tell just the extent and the type of involvement of the sinuses; yet because of this failure it does not mean I do not have an x-ray taken of all my cases before operation, as anatomy, suggestion of exudates, hyperplasias, and wall destruction mean much to me in my operative technique.

Have x-rays taken by men who are specialists in that work, and not by the dentist, the internist or the rhinologist who may have happened to have a new x-ray outfit. Remember, the important part is not so much the taking of the roentgenogram as what you see after it is taken.

SUMMARY

1st. It is the posterior ethmoidal and sphenoidal sinuses which are in close relation to the optic nerve.

2d. It is not the manifestly purulent cases nor the systemic and focal infection types I wish to portray, but the nonpurulent or so-called hyperplastic types.

3d. One must not forget the tissue spaces and their relation to the lymphatic capillary network of the sinuses,

4th. and because of this network, the ease of drainage by continuity from the sinuses to the optic nerve and its meninges.

5th. Two types of cases are brought to your notice: hyperplasia with sepsis and hyperplasia without sepsis.

6th. Use autogenous vaccines in all septic eye conditions.

7th. Have your x-rays well done.

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DISCUSSION

Dr. Nelson S. Weinberger (Sayre): This paper is further evidence of the interest and importance attached to diseases of the accessory sinuses in their relation to ocular disease. The subject is most important and too much study cannot be applied to it. It again impresses upon us the inseparability of ophthalmology and rhinology.

The subject here is limited to considerations of the hyperplastic types of sinus disease, and more especially of the posterior ethmoid and sphenoid sinuses. It does not include sarcoma.

We are realizing more and more that this type of sinus disease is the most prolific cause of the more obscure ocular affections, particularly those of the optic nerve and retina. Its location and early pathology make its diagnosis more than commonly difficult, and the recognition of the early stage is almost imperative because of the highly specialized structures secondarily involved. In fact we know that certain ocular findings demand from clinical experience that the cause must be strongly suspected to be in the posterior group of sinuses, and that nothing must be left undone until we are satisfied that they are healthy.

Superficial examination, delay and procrastination in dealing with the posterior group in these ocular conditions is often unfortunate. On the other hand, we have all seen what wonderful results can be obtained by early and decisive action.

As Van der Hoeve, quoting Dan MacKenzie, so well said: "The absence of any sign of disease inside the nose is not sufficient to exclude sinusitis from the diagnosis."

Even the best x-ray and skillful interpretation fail at times to reveal existing disease of the posterior group, and a negative x-ray report must not be regarded as positive proof of a healthy posterior group when so much is at stake. The inference is evident. Clinical experience has proved again and again that the surest way to prove a sinus negative is to open it. Too much reliance should not be placed upon autogenous vaccines and suction. Their curative value is too uncertain.

This is an excellent paper, and my discussion simply emphasizes some of the important points.

Dr. Fred Fisher (Erie): If we are going to do anything with intra-orbital growths we must make an early diagnosis. Even after what is apparently a thorough examination and a careful going over of the case, a good man may slip up in a case of beginning sarcoma and beginning orbital growths. However, this really applies more often to the man who practices optometry after a six months' course. I know men of this kind who have four times refracted an eye behind which there was a sarcoma. In any case, do not forget to go over these cases most thoroughly, using transillumination, x-ray, Wassermann, etc., in an effort to establish the diagnosis. When you first see the case, make use of all these means and don't wait until after the optometrist has refracted four or five times and then sent the case back to you. By that time you will be able to recognize the sarcoma but it will be too late to remedy it.

Dr. Burton Chance (Philadelphia): I want to express to Dr. Shoemaker my personal thanks for this most instructive list of orbital infections. I know of no province in ophthalmology where there is so much to battle with as the condition he has mentioned. His paper is most illuminating. I unhappily come from a large medical center where sometimes work is forced upon us and we do not have the chance to study as men in smaller centers do. And, too, sometimes our diagnosis must be made instantly.

Concerning Dr. Brum's paper, it brings to my recollection the exhibition which Professor Schaeffer showed us in Philadelphia. I wish that everyone could have the opportunity of seeing his exhibition and hearing him talk.

MALDEVELOPMENT DUE TO ORO AND NASOPHARYNGEAL OBSTRUCTION*

WALTER T. ANNON, M.D.

PHILADELPHIA

Oro and nasopharyngeal obstructions are of sociological as well as of medico-surgical importance. Their ill effects were recognized and described by the Father of Medicine, Hippocrates. As the eminent orthodontist, Dr. Angle, wrote, "When we thoughtfully consider all that enters into the final production of a face beautiful in balance and proportion (and an equally perfect body), that is, how there must have been the normal growth and development of the different peculiar bones and muscles, the normal growth and functionating of nose and throat, palate, tongue, lips, cheeks and especially of the teeth, the wonder is not that they are so few, but that they are not still more rare."

Regardless of etiology, the question before us resolves itself into one of mouth-breathing. Hart estimates that fully seventy per cent of children are more or less mouth-breathers. Just as catarrh is popularly supposed to be a disease, so mouth-breathing is considered a habit. Catarrh and mouth-breathing are expressions of abnormal conditions; they are symptoms of disease. The child does not recognize its presence, which is usually free from pain, and does not as a rule complain; therefore, the parent is not apt to make inquiry or call for examination. Here the public medical inspector often comes to the rescue. At least in regard to maldevelopment, mouth-breathing is a trouble of childhood and its effects are to a greater or lesser degree permanent throughout life, so the subject is of especial importance to the pediatrist and rhinologist. Moreover, many of the older general practitioners still look upon adenoidectomy and tonsillectomy as a fad, and the children must reach the rhinolaryngologist for early correction through the pediatrist. We repeat "early correction" because after the facial bones and mandible are quite "set," removal of oronasopharyngeal obstruction only minimizes mouth-breathing and does not correct deformity.

The diseases and abnormalities affecting the nose and throat which may be factors in obstructions have been concisely classified by Dr. Chevalier Jackson:

1. Acute inflammations.
2. Chronic inflammations.
3. Acute and chronic abscesses.
4. Ulceration.

Their sequelæ may be:
  (a) Hyperplasia.
  (b) Edema.
  (c) Cicatrices.
  (d) Adenoids.
  (e) Tonsillar disease.

5. Nervous affections; in children chiefly vasomotor disturbances of the erectile tissue.
6. The chronic infective inflammations with mixed infections, i. e.:
  (a) Tuberculosis.
  (b) Syphilis.
  (c) Lupus.
  (d) Actinomycosis.
  (e) Glanders.
  (f) Leprosy.
  (g) Rhinoscleroma.
7. The neoplasms, especially of benign type.
8. Foreign bodies.
9. Anomalies.
10. Malformations.
11. Trauma.

In not every case of obstruction does there seem to be need of a thorough analysis with regard to arriving at a diagnosis; but in working out etiology, is it not helpful and wise to keep the late Dr. Braden Kyle's routine in mind? What is the lesion? Where is it located? What is the cause?

Copeland pointed out that psychic influences should be recognized as secondary factors in maldevelopment. Habitual facial expressions, physical manifestations of certain psychic influences, have effect upon the alveolar processes through unequal distribution of muscular force habitually acting in one direction.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

Dawbarn claimed that the pull on the adherent faucial pillars in cases of enlarged tonsils, combined with the negative intranasal pressure in mouth-breathing, causes elevation of the oral vault and pointing of the dental arch.

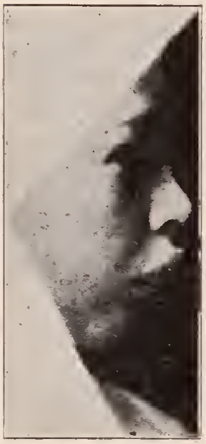

Fig. I (a). Adenoid Type.

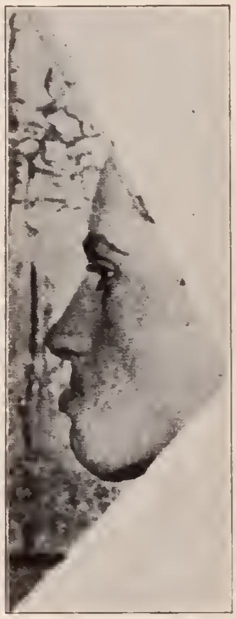

Fig. II (a). Tonsillar Type.

Heredity plays a part, in that the brachycephalic type with a spacious nasopharynx is much less subject to disease and subsequent obstruction than the dolichocephalic type.

The popular idea is that, by far and away, the most common causes of oronasopharyngeal obstruction are the hypertrophied pharyngeal tonsil or adenoid and enlarged faucial tonsils. However, many believe that deformities are not caused by these structures but by malnutrition. Yet, is not malnutrition often part of a vicious circle induced by these bodies through obstruction. They not only interfere with developmental but also with respiratory function in that the inspired air is not properly warmed, moistened or filtered. They, too, interfere with phonation, olfaction, and gustation.

The development of the nasal tip depends upon the normal development of the nasal septum, premaxillary bones and nasal cartilage. These are all seriously affected by chronic mouth-breathing. In mouth-breathers the base of the nose remains narrow and drawn in appearance. The ala often remain thin and flabby, thus causing permanent nasal obstruction by collapsing under atmospheric pressure.

The eustachian tube often becomes blocked due to nasal obstruction. Rarefaction of the air in the middle ear takes place, retraction of the drum follows and possibly transudation into it. Suppuration is not rare and temporary deafness is common.

In mouth-breathing, there is perverted function of the facial muscles about the undeveloped nose and lips and the muscular relaxation imparts a vacant, stupid appearance to the face. There is arrested development of the middle third of the face. The unequal muscular pressure in the mouth-breather favors a narrow, v-shaped maxillary dental arch, high palate, protruding upper anterior teeth, and undeveloped mandible. Lisher believes that the mandible, in normal breathers, is held in place by atmospheric pressure as well as by muscular force. In mouth-breathers, it drops down and back, consequently it suffers in development both as to size and form. Bloch believes that the fibers of the muscles of mastication are stretched during chronic mouth-breathing and thereby suffer in strength.

In normal breathing, a positive pressure exists in the nasal chambers and a negative pressure in the oral cavity; whereas, in mouth-breathing, these pressures are reversed and there comes an imbalance between air and muscle. The short, thick upper lip is pulled upward and forward and exerts little if any labial force on the upper incisors; while the tongue, during deglutition and the moistening of the dry oral mucosa, exerts lingual pressure and favors protrusion of the upper anterior teeth. The hypertrophied lower lip is pushed back of the upper teeth in order to close the mouth, thereby forcing the upper incisors labially and the lower incisors lingually. The upper arch becomes narrow, as the tongue, lying on the oral floor in mouth-breathers, fails to equalize the pressure exerted upon the upper molars and premolars by the cheek muscles.

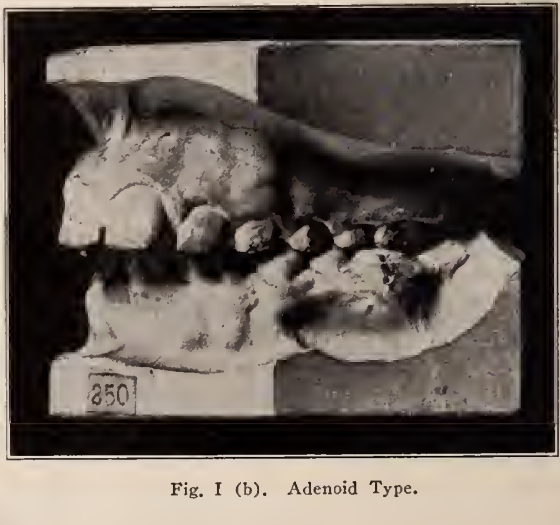

Fig. I (b). Adenoid Type.

In case of enlarged tonsil obstruction, the lower jaw is pushed forward in relation to the upper jaw in order to compensate the airway occupied by hypertrophied lymphoid tissue. This malposition also relieves tension of the faucial pillar on inflamed tonsils. Steadman points out that this type may be in part caused by the habit of thrusting the lower jaw forward. This type appears as early as three years of age and correction should begin immediately. Cases neglected until eight or ten years of age may never be restored to normal condition.

That eminent orthodontist, Dr. G. B. Steadman, of St. Paul, Minnesota, very kindly supplied the dental models of the typical adenoid cases with large lower lips and of enlarged tonsil cases which may also have adenoids.

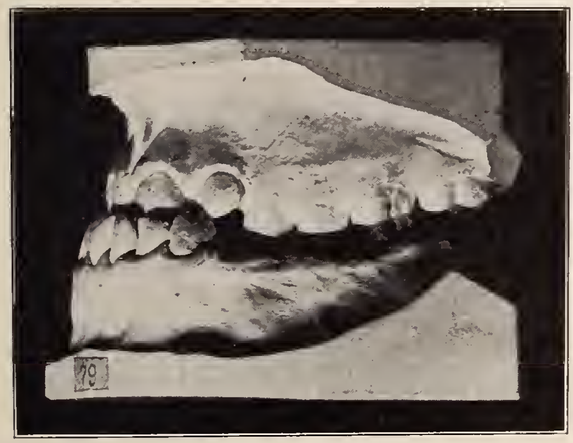

Fig. II (b). Tonsillar Type.

Obstructed nasal respiration often causes caries of the teeth, for it fosters the invasion of the mouth by bacteria. Mancioli reports that, in mouth-breathers, the upper incisors and lower molars are chiefly affected.

The voice of nasopharyngeal obstruction lacks nasal resonance. In cases of hypertrophied tonsils it tends to be guttural and thick. Speech may be indistinct and stuttering is sometimes due to chronic mouth-breathing.

The pediatrist is especially well acquainted with the chest deformities due, at least in part, to oronasopharyngeal obstruction. The obstruction renders respiration superficial and thereby limits expansion, which results in so-called pigeon-chest with lateral depressions of the lower part of the chest and prominence of the sternum. Limited expansion leads to anemia and lowers the resistance of the mucous membranes to disease.

Let us hope, that we may more fully appreciate the intimate relationship and the interdependence of the specialties and that unlimited coöperation may continue to develop between the pediatrist, orthodontist and rhinolaryngologist.

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DISCUSSION

Dr. E. E. Graham (Philadelphia): I am interested in the question as to how early the child should be operated on. I have heard this question discussed at a number of meetings, and there seems to be a very decided division of opinion. Personally, I have seen very few children who, in my judgment, should be operated upon before the third year.

Dr. Annon (Philadelphia): I am very curious to know how many members of this section of the Society are in coöperation with the orthodontists; in other words, dentists who are giving their time exclusively to the correction of malocclusion of the teeth.

Dr. Henry T. Price (Pittsburgh): I do not know whether or not orthodontists practice in the smaller towns, but many are kept very busy in the larger cities.

CONCERNING CERTAIN FACTORS IN THE ETIOLOGY AND TREATMENT OF RICKETS*

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PHILADELPHIA

ETIOLOGY

Two Views: Hygienic and Dietetic

In my experience one sees rickets much more commonly among the poor than among the well-to-do, although if the latter are fed on proprietary foods which usually contain a deficient amount of fat and proteins and an excess of carbohydrates, rickets of a mild or severe character will often develop. We are all familiar with hospitalism in children. Any physician who has had a large experience in a foundling hospital has learned that rickets will develop in his foundling wards in spite of the fact that the milk and other foods supplied to these children are the very best that can be purchased. Again it has been my experience in these same wards that some of the children develop rickets on a diet that other children thrive on. The suggestion that rickets is a deficiency disease due to an absence of the special vitamin in the food—fat soluble A—does not seem tenable, although at one time this view had many advocates and was supported by much clinical evidence.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

Deficiencies in the diet, while important, are not the only factors that can and do produce rickets and I feel sure that all physicians who have studied this phase of the etiology of rickets, especially in view of our recent investigations, will agree with this statement. Certainly we have all seen many illustrations of the fact that some children develop rickets when the food contains the normal amount of all ingredients necessary for the development of the bones and all other structures of the body.

Most of you are probably familiar with the experience of Patton.[1] In order to study the influence of fat in the diet, two litters of puppies were procured. Half of each litter were fed on whole milk and kept in the laboratory. The other half of each litter were fed on skim milk and kept in the country. The laboratory puppies developed rickets. The country puppies did not develop rickets. However, other feeding experiments carried out along these same lines, do not always show similar results, so that these studies must not be accepted as conclusive.

This experiment shows that fat is not the only element in the production of rickets and that our old saying, "fat starvation produced rickets" was only telling part of the story. In our children's work at Jefferson we find, however, that, especially in colored children, cod liver oil acts almost as a specific, not only in the cure of children with rickets but in the prevention of rickets in those children, both colored and white, who come to us before the condition of rickets is apparent clinically. In these dispensary cases practically the only change made was the giving of cod liver oil. The home life and food of the child was the same after giving the oil as it was before. We all, of course, appreciate that the condition of rickets is histologically present before we can demonstrate it clinically. Cod liver oil, however, sometimes in my experience fails to prevent and fails to cure rickets. It is of interest to follow these children who are taking cod liver oil with systematic x-ray examinations and to observe the improvement which takes place in the epiphyses.

Our old plan of curing hospitalism was much improved by the idea of getting the children out in the fresh air,[2] and of course this fresh air benefited the rickets, but we failed at that time to appreciate that fresh air outdoors was combined with another important element—sunshine. I question, however, whether in the early days of fresh air, sunshine had much to do with the improvement then noted; because, while I was one of the earliest and most insistent of the advocates of fresh air, the child's body in my earliest experience with fresh air was not exposed to the sun's rays.

HELIOTHERAPY

We have all appreciated for a long time the beneficial effect of sunlight on living plants and we now know that light energy is stored in plants by means of the intermediation of chlorophyl in a manner very advantageous to mankind. We all have also believed that sunshine was in some way of distinct benefit to human beings but we never attempted until recently to prove the beneficial influence of the sun's rays in a scientific manner. We accepted it as a clinical fact. Sunlight is so often associated with other factors, as good food, fresh air, cod liver oil and tonics, that it is often difficult to ascribe to it the exact rôle it plays in treatment.

We now know that the effect of sunlight is not local only, but that it is systemic. It affects parts of the body not exposed to the sun's light. Rats fed on a ricket-producing diet will not develop the disease if allowed sunlight. Sunlight is not the only factor, however, because rats fed on a full anti-ricket diet do not develop the disease if kept in the dark. Now, sunlight we know contains only a moderate amount of far ultraviolet rays and can rarely produce any harmful results. Much more decided effects are, however, produced by artificial means of radiation, as bare metallic arcs and the quartz mercury arc.

I wish to report my experience with the treatment of rickets with sunshine both in private and hospital practice. All of these cases have been treated either in or near Philadelphia, which is practically at sea level. It is to be remembered that the power of the ultraviolet rays of the sun is in direct proportion to the altitude. The higher the altitude the greater the bactericidal power of the ultraviolet rays. It is estimated that at sea level the effect is only one-half as great as at an altitude of 5,000 feet. This chemical action which the sun's rays possess has been studied much more closely than its physiological action. Its influence physiologically is more difficult to measure and appreciate than are its chemical powers.

The chemical power the sun's rays possess to destroy or inhibit bacteria is of course an old story, but that something was absorbed from the sun's rays into the human body is of rather recent knowledge.

In the treatment of these children an effort was made gradually to increase the portion of the body exposed to the sun's rays and the length of time of the exposure. The work was begun in the early spring of this year and has been continued up to the present time. Among my private patients were the children of several physicians who, appreciating the results reported in medical journals, were perhaps more willing than other people to carry out the treatment. In my hospital cases I found the nurses enthusiastic helpers and the results most satisfactory. The portion of the child's body exposed to the sun's rays on the first day was only the feet and the length of exposure only five or ten minutes. Next day the feet and half of the lower legs were exposed for ten minutes and gradually the amount of surface exposed was increased and the time lengthened to half an hour or an hour. In my own cases improvement was usually noted in about a month to six weeks, and in none of my cases has the entire body been exposed, as has been reported by others. The entire bed was always, if possible, placed in the sunshine and the child's eyes and face protected from the sun's rays, but the sunshine was of course only in direct contact with the parts of the child's body that were uncovered. In a few of the children slight sunburn occurred, but ultraviolet rays apparently are comparatively safe and in this respect have some advantages as compared with roentgen ray treatment.

Attention should be called to the fact that the potent rays of shorter wave length penetrate glass poorly, consequently light of an artificial character, if covered by glass, can do no harm and has much of its therapeutic influence removed.

Hess and Unger[3] report their results with ultraviolet rays in the treatment of six infants with rickets. Treatment was given three times a week for two months. In all the children both hemoglobin and red cells increased and the rickets showed definite improvement, as shown by roentgen ray examinations. No change was made in the diet in these children and the treatments were given in February and March when rickets is usually most marked.

It is, of course, true that our exact knowledge of the influence of light is as yet very imperfect and that much remains to be investigated and understood in this broad field of therapeutics; nevertheless the action of near ultraviolet light and far ultraviolet light has been sufficiently studied to demonstrate that their influence resembles closely the effects following the use of radium and roentgen rays.

It has seemed to me from my limited experience with sunshine that it is of decided help in almost all conditions of malnutrition in children. Occasionally children seemed to become more irritable and fussy when given a sun bath. Some apparently became nervous and feverish. Each child was studied by itself, but in the large majority of cases the result was satisfactory.

Bone tuberculosis in children seems undoubtedly to be benefited by the sun's rays and its beneficial influence not only on the tuberculous bones but on the general health and strength of the children has been repeatedly shown at numerous sanatoria. That it is of great benefit in many conditions other than tuberculosis is certain and it should be made a definite part of the treatment of many diseases and subnormal conditions in children.

The influence of light in the prevention or cure of rickets is influenced by the amount of pigmentation of the skin. This can be proved by experimentation on white and black rats. Pigment in the skin has a tendency to lessen the protection afforded by sunlight. Colored infants to be protected require more sunlight than do white infants. Colored children in their native climate show as a rule very little evidence of rickets.

I have had no experience with the mercury vapor quartz lamp or metallic arcs, but the power of preventing the development of rickets was clearly shown by Powers[4] and his associates, who exposed ten rats to the mercury vapor quartz lamp. After 64 days the rats were killed. They presented absolutely no evidences of rickets. The radiations of the lamp had apparently acted exactly like direct sunlight or cod liver oil, as the animals seemed in first-class physical condition.

The mercury vapor quartz lamp takes about the same amount of time to promote the required changes in the bones as does the giving of cod liver oil. The blood serum shows the same changes in phosphorus concentration after heliotherapy as after the administration of cod liver oil.

CONCLUSIONS

1. Much of our former treatment of rickets based on empiricism has been shown to accord with modern ideas of treatment.

2. Deficiencies in the diet, while important, are not the only factors that can and do produce rickets.

3. That cod liver oil is a wonderful help in the prevention and cure of rickets is undoubted, but it is also certain that it sometimes fails to cure and fails to prevent rickets.

4. Sunshine is a potent factor in the prevention and cure of rickets. The sun's rays should come in direct contact with the child's body.

5. The effect of sunlight is not local but systemic.

6. Sunlight is of great benefit in bone tuber-

culosis and is often helpful in many conditions other than bone tuberculosis and rickets.

7. Where the food is perhaps insufficient in quality and quantity, the surroundings unhygienic and with very little sunshine, rickets may be due to poor food, deficiency of sunlight, or to both.

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DISCUSSION

Dr. Robert K. Rewalt (Williamsport): What is the cause of rickets? Despite the tremendous amount of research work done, the question has not been definitely settled. Diet plays a most important part as a causative factor, but in what way? When vitamines were first brought forth as being essential substances for proper growth of human tissue, the problem was thought to be solved. In fact, to-day the fat-soluble vitamine A is constantly referred to in literature as the antirachitic vitamine. Yet we all see cases which have been fed on breast or cow's milk formulas of proper proportions, developing rickets. We know that the various canned foods are more apt to produce rickets than fresh foods. Yet again we see many children fed on condensed milk exclusively for seven or eight months, who present no demonstrable signs of rickets.

Hygienic conditions, season, climate, race and age all play a more or less important part in the causation of rickets. Overcrowding in tenements with lack of sunshine and fresh air predisposes to this disease. It seems to be more common in winter than in summer. This would seem to indicate that the rays of sunlight are good prophylactic treatment for this condition. Climatic conditions have some bearing on the disease. It is more common in England and Germany, countries in the temperate zone, than in Norway and Greece. Negro children, particularly the ones living in the North, are very much predisposed to rickets. The same is said of Italian children whose parents come from southern Italy to live in the northern part of the United States.

Rickets is observed largely in children two years of age and under. Very frequently the onset of rickets takes place after a severe acute infectious disease. Recently I saw two cases that presumably had their inception following severe cases of pertussis.

In the breast-fed, the diet of the mother must be carefully watched. There is no doubt but that the time is not far distant when food chemistry will leave the infantile stage and we shall be able to prevent rickets by giving the mother and the cow the proper kind of diet. Exposure to sunlight and the administration of cod liver oil to some breast-fed babies and most artificially-fed babies will likewise diminish the prevalence of this condition.

As to treatment, Dr. Graham has covered the ground thoroughly. Proper diet, heliotherapy by direct rays of the sun, ultraviolet rays and the quartz lamp, together with the administration of cod liver oil is now the accepted treatment. Several years ago Howland presented an interesting number of x-ray pictures before the American Pediatric Society, showing the curative effect of cod liver oil on the epiphyses of rachitic bones. Two recent cases in my own practice have been benefited by the use of adrenalin subcutaneously.

NERVOUS MANIFESTATIONS OF RICKETS*

FRED E. ROSS, M.D.

ERIE

A perusal of the current literature in scientific medicine convinces one of the ever growing interest in the subject of rickets. Although a disease of great antiquity the question of its etiology has been the subject of much conjecture and investigation. One theory after another has had its champion, only to be cast aside as failing to satisfy the critical tests of scientific investigation. Its study has been stimulated by the remarkable outbreaks of rickets and allied disorders in the Central Empires during the recent World War. It is now regarded by Hess of New York, as the most common and most frequently overlooked disorder of childhood, fully three-fourths of the infants in our large cities showing rachitic signs in some degree. Newer methods of examination by means of the roentgen ray have shown its presence when it was not suspected.

While all are agreed that the most commonly observed manifestation is a deficiency in the deposition of calcium salts in the bones and intercellular cartilages of the epiphyses, opinions are by no means unanimous among scientists and clinicians as to what may be the causative factor in the failure of the system to assimilate the calcium salts. For it seems to be quite generally believed that the fault is in the assimilation of the salts of calcium, or possibly phosphorus, or both, and that the disease may be present when these salts seem to have been ingested in sufficient quantity. However, it is stated on good authority that growing animals require a much greater amount of calcium salts in proportion to their weight than is required for the maintenance of adults. Camerer,[1] in summarizing a long list of investigations upon the food requirements of children of different ages concludes that the amount of calcium received by the average nursling is just about sufficient to maintain normal growth leaving little if any margin of safety. Many classical experiments are on record which show the deleterious effects of an inadequate ingestion of calcium salts by growing animals such as pigs and puppies. For instance, it was shown long ago that puppies given meat from which the bones were carefully removed became undernourished and developed a condition of osteoporosis resembling rickets, while those given bones to gnaw developed normally. Quite recently Hess and Unger,[2] of New York, have concluded that the prevalence of rickets in the breast-fed children of negro women is due to the fact that these mothers were partaking of a diet containing an excess of carbohydrates and a deficiency of vegetables and fruits, which are known to contain large proportions of calcium in addition to the accessory food factors which are necessary for proper nutrition. Hart, Steenbock and Humphrey[3] have shown by careful experiments that the mere addition of calcium to the food of cows prevented the birth of premature and weak calves. Many other instances might be cited in support of the contention that an adequate amount of calcium in the diet is a very necessary factor in growth and development.

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Calcium constitutes a larger proportion of the body weight (about 2%) than do any of the other inorganic elements. About 99% of this element is found in the bones, comprising about 85% of their mineral matter. The remainder of the calcium in the body occurs as a necessary constituent of the soft tissues and body fluids. In the blood its presence is essential. Besides being an important factor in coagulation, a proper relation between this substance and sodium determines the rhythmical contraction of the heart muscle. What effect this relation may have in the functioning of other muscles has not been determined but we do know that a diminution of the calcium below normal in the circulating blood or other fluids causes nervous irritability. Calcium also has a function in digestion, as it has been found to activate the enzymes invertin and trypsinogen. It also exerts a favorable influence on the metabolism of iron, as a smaller amount of this element seems to be needed to maintain equilibrium if a sufficient amount of calcium is administered. Meltzer, in the Transactions of the Association of American Physicians (1908), summarizes the results of an extended series of investigations by himself and others as follows: "Calcium is capable of correcting the disturbances of inorganic equilibrium in the body, whatever the directions of the deviations from the normal may be. Any abnormal effect which sodium or potassium or magnesium may produce, whether the abnormality be in the direction of increased irritability, or decreased irritability, calcium is capable of reëstablishing the normal equilibrium."

At the present stage of medical history, when one is standing with his back to the wall engaged in some heated etiological controversy, as a last resort "pituitary" is the magic word which sends his opponents scurrying for shelter. If by chance some few still have the temerity to raise a haughty head, "endocrine disharmony" leaves him sighing for other worlds to conquer. There seems to be no doubt, however, that many if not all of the organs which preside over internal secretion, such as the thyroid, parathyroids, ovaries, testicles, pituitary and thymus, owe their usefulness, particularly in infancy and childhood, to the part they play in the metabolism of calcium.[4] The thymus normally ceases to function after the largest part of bone growth is attained. The relation of pituitary disturbance to acromegaly and gigantism is suggestive. In Graves' disease, with its hypernervous excitability, there is always improvement if meats and other acid-forming foods are withheld from the dietary and food given which contains an abundance of calcium salts. Whatever relation the testicles may have to calcium, it is known that the likelihood of convulsions is less in castrated animals than the uncastrated. In plant life also calcium is important, and will cause vigorous growth in a plant which has been previously kept in the presence of an excess of magnesium and during which time growth was slow and imperfect.

From this brief and incomplete survey of the uses of calcium to the growing organism it would seem that, although the great bulk of this substance is found in the bones, yet the remaining portion, while present in minute quantities, is very essential to the proper maintenance of function. It would also seem that while failure to assimilate it properly may cause malformation of bone, there are other functions of the body which would suffer still more from its absence, with consequent deleterious effects far overreaching in vital results the failure to form strong bones.

Leaving out of consideration the spasmophiliac diathesis and its relation to disturbed calcium balance and consequently to rickets, all are familiar with the fact that one of the first manifestations of rickets clinically is restlessness at night. At least the restlessness seems to be more pronounced at night, possibly for the reason that night is considered the time for rest, and its absence is more noticeable on the part of the attendants. As a matter of fact these little patients are restless or easily disturbed all of the time, and evidences of an unstable nervous system are very early manifested. One wonders if the absence of the stabilizing effect of calcium is not a factor in these cases. As these children grow older we find that nervous unbalance is very easily attained. They react abnormally to any form of stimulus. Convulsions are common, digestion is easily disturbed, they are fretful and fussy and are difficult cases to feed. In later childhood these patients become the bane of parents and physician. They are the typical spoiled children. The inhibiting action of the brain seems abnormally slow of development and they act upon the slightest impulse and change at once to something else without settling to any definite act. These are the little pestiferous patients who plough through the literature on the doctor's waiting room table and meddle with everything in the office. They are apprehensive and hard to examine and are likely to go into a tantrum when crossed, or an attempt is made to control them. The mother, who possibly may have had the same propensities herself as a child, is usually by this time distracted and worn out nervously and is incapable of enforcing the proper discipline. Consequently the child develops certain habits of nervous instability which cling to him through life. One need not mention the handicap which these children have when the school age arrives. Although some are remarkably precocious they have not as a rule the nervous stability to carry through their studies to completion without a physical breakdown. Or if the studies are completed it is with a severe strain on the nervous system. They are not likely to become the type of citizen which is most useful to the race. As Miles[5] well says, "Realizing as we must that neuroses cause more suffering among the human race than any other ailment, and that perfectly balanced, emotionally stable adults are no longer the rule, the necessity for the early recognition and proper appreciation of the importance of the nervous state of the infant and young child cannot be emphasized too much. I feel that a great responsibility lies with the pediatrist in the upbuilding of the future citizen who will be mentally able to fill his proper place in society."

There is no doubt that an unstable nervous condition in the mother reacts unfavorably upon the sensitive nervous organism of the child. Much of this may possibly have been due to dietetic errors on the part of the mother which have to do with salt metabolism, particularly with calcium. Lusk[6] emphasizes the importance of a diet rich in calcium for pregnant women, especially during the last ten weeks of pregnancy, when the fetus is storing calcium at a rapid rate. It has been shown that the food of the family should furnish at least .67 grams of calcium per day. A study of American dietaries shows less than this amount of calcium in 50% of those studied, and less than .45 grams in 15%. Apparently the American diet is more often deficient in calcium than in any other element. It seems very important that the diet of the prenatal period should be carefully supervised and that an abundance of milk and vegetables with less meat and sugar be advised.

Inasmuch as the infant and growing child require three or four times as much calcium as an adult it becomes the province of the pediatrician to see that such foods are given as supply this requirement. Milk is the one food which is particularly rich in this element. Four hundred calories of milk furnish enough calcium for the whole day's requirements. Cow's milk contains considerably more than human milk, more calcium than lime water which is a saturated aqueous solution of lime. Unfortunately much of the calcium of cow's milk is lost to the system through the inability of the infant to absorb the fat and the consequent formation of calcium soaps which are unabsorbed and are passed in the stools. Breast milk from a mother whose diet has been properly supervised, providing she is otherwise in good physical condition, furnishes the best means of supplying this as well as other ingredients in the most available form. The ordinary proprietary infant foods with their large sugar and starch content contain very little calcium and some an excess of sodium and potassium, leading to water retention in the tissues and a tendency to spasmophilia; for it is well known that the sodium and potassium ions in excess are nerve irritants. The usefulness in malnutrition of the various casein foods may depend on the fact that in their preparation the whey is removed with its large sodium and potassium content, leaving the calcium in the curd. In the food of older children about one-half of the calcium is removed in the milling of grain, which process also removes a large percentage of the iron and phosphorus. The fruits and vegetables are fairly rich in calcium, while some of the green vegetables are strikingly so. In fact it is interesting to note that these same articles of food are also rich in both fat soluble A and water soluble B vitamins, which may or may not have a bearing on their usefulness in preventing rickets. Egg yolk also contains an abundance of calcium in an assimilable form as well as many other important food ingredients, which entitles it to a place in the dietary of infants and young children which has not as yet been given to it.

While the contention of Mellenby that fat soluble A vitamin is the antirachitic factor in the diet has been disproven by Hess and others,[7] at least as concerns its presence in milk, yet it has been proven that calcium absorption is enhanced by the ingestion of certain fatty foods, particularly those rich in fat soluble A vitamins, notably butter and cod liver oil. While Holt[8] and his coworkers found that butter was as useful as cod liver oil, at least in one case studied, Hess[7] suggests that a teaspoonful of cod liver oil given three times a day to all the children of New York between the ages of 3 and 15 months would rid that city of rickets in a year. It would seem that at last this old-fashioned remedy is coming into its own and has now been promoted from the realm of drugs to that of a full fledged food. Another factor, perhaps more important than either food or drugs in the promotion of conditions which bring about the absorption of calcium, has literally been brought to light, and it is good old-fashioned sunshine![9]

If the suggestion is well founded that children with unstable nervous systems belong in the same category as those with the bony deformities attributed to rickets, conditions which prevent the development of the latter disease ought to have a favorable influence in bringing about normal development of the nervous centers in children. While other factors, such as heredity and environment, undoubtedly play a very prominent part in determining the nervous temperaments in children, it seems reasonable to suppose, from what we know of salt metabolism, that a proper diet may go a long way in keeping these children nearer to the normal condition. The importance of diet in determining temperament has not been properly recognized. As Hall well says, "Man is what he eats and what he does with it through all the intricate formulas of physiological chemistry." When dietetics shall have been given its proper place in the curriculum of our medical schools and its importance is emphasized, the coming generation of physicians will be far better equipped to serve humanity efficiently than has ever been the good fortune of any of their predecessors. In fact, food chemistry and the science and art of preparing and cooking food has never as yet been given the attention it deserves in the public schools of our land. Pediatricians have had to lead the way in investigating what the future man "eats and what he does with it." They realize that it is only by a careful supervision of the diet that a proper development can be safeguarded. By such measures, combined with the proper attention to sunlight and other hygienic aids, disorders of nutrition such as rickets and allied conditions may be prevented.

There are certain psychological tests in which the victim is placed in a chair and the examiner proceeds to roll off a series of single worded questions. The victim is supposed to fire back the first word that comes into his mind. Under such circumstances if the victim were an average medical man and he were confronted with the word "rickets," he would promptly fire back "bones!" To call attention to that fact and to have a small part in correcting this impression is the principal mission of this paper. Rickets is primarily not a disease of the bones at all, but a disorder of nutrition producing both slight and manifold disturbances of function in various organs and tissues of the body. Not the least of these organs and tissues to be affected are those of the master tissue, the nervous system.

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DISCUSSION

Dr. John F. Sinclair (Philadelphia): I feel that Dr. Ross is to be congratulated for the facts that he has brought out in this illuminating paper of his—the fact that in rickets we are dealing with a deficiency disease which requires particular attention to the nutrition of the child; that we have this disease manifested, not alone in the bones but by other manifestations, principally, as he has pointed out, nervous manifestations for the most part appearing early, and of rather marked significance. The manifestations are those to which he has referred—the restlessness of the child, and the fretfulness, and the difficulty in nourishing it. And there is, too, I think, one point which I believe he did not mention: the symptom of head sweating, which is undoubtedly a vasomotor disturbance and closely allied in that way with the nervous system. Our attention has frequently been called to the fact that we have notably a latent form of that disease; that we have in scurvy a latent form of scurvy; and may it not be true that these early symptoms, these manifestations of the nervous system are also properly symptoms of a latent condition of rickets which has not progressed to the more open stage that is shown by the bony changes and so clearly brought out by the x-ray examination?

In his paper Dr. Ross has laid a good deal of stress upon calcium, from the fact, to use the automobile phrase, that it is a stabilizer or equilibrator. I feel that perhaps in that instance it might have been better for him to have laid a little more stress on the phosphorus, which he merely mentioned, because the researches of Howland and Merritt have pretty well established that in rickets we have no change, no decrease in the calcium in the blood, that there is a decrease in the phosphorus in the blood, and for that reason we must take into consideration the rôle played by phosphorus. This is borne out further by the work of Park and his colaborers who have clearly established that phosphorus plays an important part.

The treatment of these conditions depends largely upon the proper diet, the cutting down of excessive carbohydrate diet which is usually found, and using one that contains milk, egg, green vegetables, fruits and the unmilled cereals. Cod liver oil is of great benefit; the rules of hygiene must be observed, and sunlight, which also plays an important part, must be plentiful.

Dr. Ross (in closing): I believe there is nothing more I wish to say. In writing a paper about rickets you can lean toward most any theory and have good authority to back you up. The reason phosphorus was not mentioned was because of the fact that there is enough phosphorus in the ordinary food to supply the requirements.

SELECTIONS

PERNICIOUS AND SECONDARY ANEMIAS TREATED WITH GERMANIUM DIOXIDE

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HARRISBURG

After the work done by Hammett, Muller and Nowrey,[1] on the Albino rat at the Wistar Institute of Anatomy and Biology at Philadelphia, Pa., and the wonderful erythropoietic action of germanium noted, it became quite evident that another very important therapeutic agent was added to our list of hematinics and erythropoietic agents.

It does seem strange that such a long period should intervene between the time that Winkler[2] discovered this element at Freiberg, Germany—and incidentally, from this its name was derived—and the time of these experiments when the real therapeutic value was recognized. One would imagine that since it is similar to the other members of this group, its real value would have been discovered earlier. It was, however, recognized by Hammett, Muller and Nowrey[1] while they were determining whether this element exhibits a toxicity toward the living organism similar to arsenic. While this work was in progress, the increase in red cells in these animals was noted, also its nontoxicity and, later on, in experiments done by these same men,[3] the change in the blood clotting time was noted.

It was through the kindness of Dr. Hammett and the Wistar Institute that we were able to obtain germanium dioxide for our work at the Harrisburg Hospital. It was supplied in powder form and a great deal was learned about this element while preparing it for use. Directions for the preparation and its use were not supplied and under the supervision of Doctors George Moffitt and Louis Wright, the laboratory men at the Harrisburg Hospital, these solutions were prepared. These men also completed the laboratory work on the patients whose records and histories are here supplied.

We learned:

First, that germanium dioxide is strongly acid.

Second, that by the addition of a decinormal solution of sodium hydroxide, drop by drop, until the neutral point was reached, the solution cleared and the germanium was made soluble.

Third, that the preparation was only active in the form of germanate ion or as sodium germanate, which was later verified by Dr. Hammett in one of his letters to me. That this is only reached by pushing it on to the alkaline side of neutrality and then bringing it to a pH of 7.6 by HCl.

Fourth, that sterilizing the solution destroys its value.

Fifth, that freshly prepared solutions only are active, that carbon dioxide should be excluded as much as possible, and that the solution must be kept alkaline.

The cases treated with germanium dioxide were not selected and no two cases were treated the same—that is, by the same dosage and at the same intervals. Varying doses were used and the preparation given at varying intervals and the results obtained varied.

We found that the cases of secondary anemia responded most wonderfully and the pernicious type with varying results, but in these cases, too, they were all made much more comfortable and improved for periods of time. Up to the present time one case of pernicious anemia is apparently well and following his usual occupation of carpenter, while in May he was admitted to the hospital in a moribund state. This case, however, was one of very recent standing and diagnosis made early, also one in which the surgeon refused to transfuse on account of his very critical condition. His blood picture at the time of admission was: RBC 480,000, Hb. 11%.

The other cases were of three, four and five years' standing. Of these, only two have proved fatal up to the present time, and one death was due to transfusion. This patient was confined to bed five months prior to the administration of germanium. He was semi-conscious, edematous, and the lower extremities were helpless and reflexes abolished. After five injections at intervals of three days, the patient recovered the use of his lower extremities, was very much more comfortable and could be moved to a wheel chair and on the veranda. The blood picture in this particular patient, however, did not change much, as I am of the opinion that the bone marrow here was whipped up already to such an extent that it could no longer respond. We found in cases of this character that one-third strength, given every thirty-six hours, caused less severe shock to the bone marrow and the stimulation continued over a longer period of time. Results could always be looked for after the second and third injection and a prognosis could invariably be given. If no nucleated red cells were found at this time and a slight leukocytosis, say of two or three thousand, we knew that the case was hopeless. Our other cases are still doing fairly well and as long as the bone marrow still responds we shall continue to give germanium.

As to the treatment of secondary anemia we are of the opinion that germanium cannot be displaced by any other drug. During the last three weeks I had the privilege of seeing a patient, female, 58, anemic, the result of a menopause beginning twelve years ago and the extraction of two infected right lower molars several years ago, which seemed to make it impossible for her to respond to treatment. We gave her three injections at intervals of four days, each injection 3 c.c., and prior to the third injection a blood examination was made and we found that the red cells had increased from 3,840,000, hemoglobin 58%, to over five million and hemoglobin 72%. This is one of many cases treated and it is not uncommon to see the red cells increase six hundred thousand per week. These results indeed are almost unbelievable but numbers of cases have shown this to be a fact.

The following are the summaries, histories and physical examinations in the cases of pernicious anemia that came under our observation and were treated at our local hospital. The secondary anemias are too numerous and will not be added to this list at the present time.

Hospital *No. 34723.* Male. Was admitted to the hospital first in September, 1921, complaining of weakness, with anemia. Father died of pernicious anemia. Three years previous to admission, which was in 1918, patient noticed soreness of tongue and became exhausted quickly. One year later he was run down and had soreness of tongue again. Four months previous to admission he complained of epigastric distress, pallor and weakness. Gastric analysis showed total absence of free hydrochloric. Examination revealed a yellow skin, pale mucous membrane, and liver and spleen barely palpable. RBC 1,736,000, Hb. 51%, WBC 9,700. Smear typical of pernicious anemia—few nucleated reds, slight stippling and polychromatophilia. Patient was transfused twice and hemoglobin rose to 58%, RBC 2,368,000. Was readmitted to hospital five months later, after having carried on his usual work until one and one-half months previous to admission, at which time the above symptoms again recurred. RBC 2,015,000, Hb. 85%. Patient transfused twice, cells again rising, with a hemoglobin of 68%. Examination of stools negative. Was admitted to the hospital a third time in July, 1922, remaining in bed since last discharge. Complained of shortness of breath and again noticed pallor and weakness, associated with edema of ankles, tingling and crawling sensations in fingers, toes and knees. P. E. showed marked pallor, lemon yellow tint. Gastric analysis showed no free HCl. 7/27, RBC 1,253,000, WBC 5,500. Poly-morphonuclears 46%. lymphocytes 51%, large mononuclears 1%, mast cells 2%. Two nucleated red cells were seen in counting one hundred white cells. On July 30th his hemoglobin was 44%, RBC 1.231,000, WBC 5,450.

Beginning with July 31st, germanium dioxide was administered subcutaneously in .04 gm. doses daily until August 9th. At this time the hemoglobin was 38%, RBC 1,311,000, WBC 4,300. Smear: polymorphonuclears 43%, lymphocytes 55%, 2 nucleated reds. Beginning with August 11th, the germanium was given by mouth in 10 c.c. doses daily until August 20th, at which time the hemoglobin rose to 48%, RBC 1,826,000, WBC 4,400. On August 30th, blood examination showed RBC 2,403,000, WBC 5,600, Hb. 44%.

Hospital *No. 34724.* Male. Age 37. Nativity, Germany. Color, white.

Family history: Father and mother dead, causes unknown. Sister died of stomach and liver trouble at age of 42. No other illness or operative history.

C.C.: "Yellow jaundice," vomiting, vertigo, ringing in ears.

P. I.: Excellent health until September, 1921. At this time had pain—generalized—all over abdomen, vomiting and general weakness. Worked until February, 22, 1922, when he was again taken sick in same manner and went to bed for three days. At this time his color changed. Also had difficulty with walking and hearing, pain in lower extremities. Since then his condition has gradually grown worse up to time of admission to hospital. During all this time his appetite has been very poor, in that he cannot relish food.

P. E.: Patient shows some evidence of loss of weight—not marked. Cachetic and of a pale yellow color. Slightly irrational. Head apparently normal. Neck normal. Eyes: conjunctiva clear; pupils react regularly to L. & A.; no exophthalmos; pupils dilated. Ears normal. Nose normal. Mouth in good condition, except for tongue, which is slightly coated in middle, red around edges, showing some atrophy. Throat negative. Teeth in good repair. Chest symmetrical; respiratory movements regular and even, rather rapid. Heart: apex beat seen and felt 1½" to left of nipple line; marked hemic murmur heard loudest over precordium; heart enlarged. Lungs: râles over posterior chest; otherwise normal. Abdomen: round, tympanitic, no rigidity. Liver dullness increased four finger-breadths below costal arch. Liver easily outlined and readily palpable, tender upon pressure. Spleen slightly enlarged. Genitals negative. Lower extremities negative except for tenderness over both shin bones. Reflexes slightly retarded. No Babinski. No ankleclonus. Upper extremities normal. Pulse 140. Temperature 102. Respirations 30.

Laboratory examinations: Stools negative. Gastric analysis showed no free HCl. Blood examinations were made every second or third day, showing gradual improvement.

Blood examination: May 20, 1922—day of admission —RBC 490,000, WBC 5,300, Hb. 8%. Smear: polymorphonuclears 45%, transitionals 2%, large mononuclears 2%, small lymphocytes 51%; marked poikilocytosis and polychromasis. After the first injection of germanium—May 23, 1922—the blood examination showed: RBC 660,000, WBC 15,850, Hb. 15%. Smear: polymorphonuclears 69%, eosinophiles 1%, large mononuclears, 3%, lymphocytes 27%; marked poikilocytosis, polychromasia, many nucleated reds, basophilic stippling and macrocytes. The second injection of germanium was given May 25th. Blood examination on May 26th showed RBC 1,450,000, WBC 5,800, Hb. 33%. Smear showed marked poikilocytosis, macrocytes, microcytes, some polychromasia, no nucleated reds. This patient received injections (5 c.c. doses) every second or third day and the blood picture gradually improved until July 14, 1922, when it showed RBC 4,510,000, WBC 8,000, Hb. 75%.

Hospital *No. 34725*. Male. Age 49. Nativity, Pennsylvania. Color, white. Occupation, timberman purchasing agent.

F. H.: Father died of cardiac dropsy. One brother died in infancy. Mother and one sister and brother living and well.

P. H.: In fairly good health until three years ago. Has not been able to work during the summer months. Seemed to pick up during winter months. Gives history of ascaris infection most all his life.

P. I.: Began three years ago. Hands and feet became cold and numb and he loses feeling at times. Nausea and vomiting increased in severity and frequency. Has become very pale. Appetite is very poor. Gets headaches of a dull character over forehead and vertex. Has had progressive failure of vision. Has lost 40 lbs. at least, in past few months. Tenderness over bony joints. Gets very short of breath and is annoyed by palpitation on the slightest exertion. Swelling of feet and ankles.

P. E.: Patient very anemic. Skin has lemon yellow tint. Mucous membranes are very pale. Head: conjunctiva bluish-white with tinge of yellow; pupils react to L. & A. Lungs apparently normal. Heart: impulse faint; apex beat in fifth interspace—nipple line; no thrills felt; heart sounds are faint but regular; no murmurs. Abdomen: scaphoid; doughy feel. Liver not enlarged. Spleen not felt or tender. No rigidity except intentional. Extremities pale and emaciated. Finger tips blue. Very slight pre-tibial edema.

X-ray examination of gastro-intestinal tract normal.

Examination of urine negative. Examination of stools, May 18, 1922, negative. May 23, 1922, occult blood positive. May 25, 1922, occult blood positive. Gastric analysis: free HCl absent; no occult blood.

Blood examination on admission, May 18, 1922: RBC 1,550,000, WBC 6,400, Hb. 28%. Polymorphonuclears 70%, basophiles 1%, transitionals 4%, large mononuclears 1%, lymphocytes 24%. Marked poikilocytosis, basophilic stippling, polychromasia. No nucleated red cells. Injection of germanium dioxide—5 c.c.—was given May 25, 1922, followed by blood examination. RBC 2,370,000, WBC 2,800, Hb. 55%. Blood picture has continued to improve. July 3, 1922, RBC 3,010,000, WBC 5,200, Hb. 50%. This patient has been receiving injections once weekly up to the present date.

Hospital *No. 34726*. Male. Age 43. Nativity, Hungary. Color, white.

F. H.: Father dead—accident. Mother dead—childbirth.

C. C.: Numbness and weakness of feet. Pains in stomach. Mind is not as active as formerly. Eyesight is not as good as formerly. Constipated.

P. H.: Gonorrhea—chancre in 1901. Operation for hernia—double.

P. I.: Began three years ago, after operation, with gastric distress, followed by numbness of left foot and a queer feeling in back of head. Superficial sensation lost at times. Has slight difficulty in making phrases. Speech is slow at times and there is a slight suggestion of hesitancy.

P. E.: Fairly well nourished. No evidence of loss of weight—has gained. Muscle tone good. No evidence of pigmentations. No bronzing. No evidence of anemia. Head normal. Ears normal. Eyes: little flattening of right pupil; no inequality; react to L. & A.; right pupil does not hold reaction to light. Nose normal. Mouth: membranes pale; tongue coated in middle; sides red and atrophied. Neck practically normal. Upper extremities normal. Chest—lungs normal. Heart: apex beat not seen or felt; no thrill or impulse; heart sounds faint, second aortic distinct; no arrhythmia; slight pulsation of right corotid vessels.

Laboratory examinations: Stool negative. Blood Wassermann negative. Spinal fluid—gold curve negative. Cell count normal. Wassermann negative. Gastric analysis—absence of free HCl. Urinalyses negative.

X-ray of teeth: Some involvement at the roots of right lower molars, with large abscess at the root of right lower lateral incisor. Small abscess at root of left lower central. Teeth were extracted, with excessive bleeding, at which time red cells and hemoglobin dropped considerably.

Blood examination on admission to hospital: August 19, 1922, RBC 2,820,000, WBC 5,700, Hb. 65%. Smear: Polymorphonuclears 46%, eosinophiles 3%, basophiles 2%, transitionals 1%, large mononuclears 2%, lymphocytes 47%. Germanium was given subcutaneously in 5 c.c. doses, every second or third day. Blood examination, August 24, 1922: RBC 3,980,000, WBC 7,000, Hb. 65%. Smear: Polymorphonuclears 62%, lymphocytes 2%, large mononuclears and transitionals, 8%, small mononuclears 30%. Slight poikilocytosis, no nucleated red cells.

Patient was put on antispecific treatment, extending over a period of months, prior to the use of germanium, on account of the history of having had a chancre in 1901.

Hospital *No. 18166*. Male. Age 25. Nativity, Pennsylvania. Ex-service man.

F. H.: Negative. Mother and father living and well.

P. H.: Negative.

P. I.: Began 1918, with weakness, loss of appetite and nausea. Has gradually grown worse until present time. Was admitted to hospital for transfusion.

P. E.: Slight evidence of loss of weight. Lemon yellow tint. Eyes normal. Mucous membrane pale. Teeth in bad condition; several missing; no pyorrhea. Tonsils small—right one diseased. Chest normal. Heart slightly enlarged; no arrythmia. Hemic murmur quite marked. Heard loudest over precordium. Slight pulsation over corotids. Abdomen: round, soft; no tenderness. Liver slightly enlarged. Spleen palpable. Lower extremities: tenderness over long bones. Slight edema of ankles. Reflexes retarded. Temperature 101^2. Pulse 110. Respirations 24.

Was transfused second day of June, without any apparent result. Germanium was given 6th day of June —5 c.c.—at which time blood picture showed RBC 1,760,000, WBC 4,200, Hb. 35%. Another injection of germanium was given June 9th, after which blood picture was: RBC 2,160,000, WBC 3,800, Hb. 35%. Germanium was given every third day, followed by blood examinations, and at no time were more than two nucleated red cells found in a field and no stippling. July 20th, 5 c.c. were administered, followed by a count of RBC 2,200,000, Hb. 46%. At this time patient refused treatment and left the hospital July 22d. Since that date patient has been fairly comfortable and is able to be about.

SUMMARY AND CLINICAL NOTES

The administration of germanium dioxide subcutaneously was not followed by any reaction or sore of any extent, except in one particular case, in which there was a small nontender, moderately indurated, subcutaneous nodule which has persisted for some time. In this particular case the solution was not prepared in our laboratory. Solutions prepared by us, we have found to be practically nonpainful on administration, and were absorbed very rapidly. Several hours following administration, no evidence could be found of the solution at cite of injection, showing that the solution was taken up very quickly. We did not give any of the solution by mouth in our cases. One case, however, has been reported to me as having received doses of 10 c.c. in that way.

From the above reports we are led to believe that in cases of pernicious anemia of recent standing, germanium has some value. We are also of the opinion that the old method of treating pernicious anemia—that is, arsenic, germanium, etc.—makes our patients more comfortable and prolongs their lives over a longer period of time than will transfusions. In those cases admitted to the hospital in a serious condition, with a temperature, we found the temperature falling on the second and third days after administration of germanium. Germanium dioxide in 40 mg. doses by mouth did not seem to have any therapeutic value whatever.

In secondary anemias germanium dioxide certainly cannot be displaced.

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Dr. O. Pine queries: Is the hyper-scientifico who intersperses his brilliant paper with frequent vociferations of “And I alone am equipped to do it,” a blood-descendant of the fleet-footed Biblical heroes who pantingly gasped in close single file, “And I alone am left to tell thee”?

ABSTRACTS FROM MENTAL HYGIENE

Vol. 6, No. 3, July, 1922

BY EDWARD M. GREEN, M.D.
HARRISBURG

SOME ASPECTS OF MENTAL HYGIENE

E. Farquhæ Buzzard, M.D., London

Mental hygiene has been a much neglected branch of medical science but the interest manifested in psychopathology and psychotherapy during recent years justifies the hope that a great advance in its practice will be made in the not distant future. Among the factors which have served to retard the growth of mental hygiene are certain misconceptions, notably the belief that the so-called functional nervous disorders are not mental disorders. If one recognizes that there exist all degrees and kinds of mental disorders and frankly discusses as such “nerves” and “nervous” disturbances, the ground will be cleared of the chief obstacle to rational mental hygiene. The lack of discrimination between medical and moral factors and the ignorance of psychological principles serve further to confuse one who does not know that the mind, like the body, may become exhausted and that endurance is dependent upon a variety of conditions. The value of rest in fatigue states cannot be overestimated, for both mental and physical exhaustion are frequently active agents in the production of mental disorders. It is the part of mental hygiene to show that ethical and medical principles are equally important in the preservation of health. The medical profession can promote mental hygiene by recognizing mental disorders as such and by using this knowledge to dissipate the stigma which now attaches to these conditions. The medical student should be trained in the recognition, investigation and general treatment of mental disorders, especially of the incipient cases, for the general practitioner is the first to see these patients and is in a position to advise in regard to the preservation of mental health when there is reason to fear that it may become endangered.

One should recognize that a number of factors may be active in the establishment of a mental disorder. The precipitating incident, the constitutional make-up and the psychological content are equally important and each may be handled by the medical adviser as to avoid the catastrophe of an actual breakdown. The chief function of mind, thinking, should be adequately exercised under the wise guidance of those chosen to train the young, for the ability to look at difficulties from many points of view is of value in the conservation of mental health. “A large factor in the present-day social unrest is of psychological origin and broader education on the lines just indicated would serve not only mental but social hygiene.”

HABIT CLINICS FOR CHILDREN OF THE PRE-SCHOOL AGE

Douglas A. Thom, M.D., Boston

It is not infrequently found that in children of pre-school age undesirable habits have been formed and unhealthy methods of reaction to the environment have been established. The factors involved in such conditions may embrace poor nutrition, ill health, unsuitable environment, a nervous system incapable of functioning in a normal manner, and inherent defect which prevent the normal development of the instinctive and emotional life. Among the fundamentals necessary for the development of the human being and which appear to be more in evidence in childhood than in the later years of life, the more important are plasticity, suggestibility, imitativeness and love of approbation. Each may be influenced for good or for evil by the home atmosphere and appear in the character of the child regardless of what his heredity may be. The function of the habit clinic is to determine the cause of the undesirable reaction in the individual case, to remove this cause or weaken its influence if possible, and to overcome the habit by proper training and treatment, replacing it by others which will tend to the child's development along correct lines. It may often be necessary to educate the parents as well in social, hygienic and moral directions. The reaction of the child can be determined more accurately than that of the adult and the undesirable habits being of recent formation can be eliminated with less difficulty than in the case of older persons. A series of very interesting case histories demonstrates how habits have become established under bad environmental conditions and how they have been corrected through the work done at the Baby Hygiene Association of Boston.

THE INAUGURATION OF A STATE-WIDE PUBLIC SCHOOL MENTAL CLINIC IN MASSACHUSETTS

Walter E. Fernald, M.D., Waverly, Mass.

In the year 1919 the Legislature of Massachusetts enacted a measure providing for an annual examination of the children in public schools of the cities and towns of the state, and those of school age who were three or more years retarded in mental development, also for a system of instruction adapted to their mental abilities. In order to comply with the first requirement one physician was selected from each state hospital and school for the feeble-minded and after a course of intensive training assigned to one of the twelve districts corresponding roughly to the area served by these institutions. The selection of pupils to be examined was made by the local school authorities, consequently the grouping was not uniform, chronological ages varying between six and sixteen years. The examination included ten different fields of inquiry, viz.: physical examination, family history, personal and developmental history, history of school progress, examination in school work, practical knowledge and general information, economic efficiency, social history and traits, moral reactions, and psychological examination. The traveling clinic, composed of a psychiatrist, a psychologist, a social worker, and a clerk, visits the cities in turn and it is expected that each district will be covered once a year. The advice given by the psychiatrist is based upon the results of his examination and upon the facts secured by the teacher, social worker, school nurse and psychologist. The pupil's possibilities and limitations having been determined, a constructive program for his future management is suggested. A correlation chart is also prepared which shows the school grade level that a pupil is theoretically able to reach at the present time, his mental age, actual school performance, and the probable sixteen-year limit of scholastic work as indicated by the intelligence quotient. The specific advice given for each pupil falls under one or more of the following six general headings: 1st, *"Continue in Grade"*; children over 12 years of age whose mental defect is not too obvious are best disposed of in this way; 2d, *"Needs Special Class"*; indicated for children under 12 years of age and those showing marked defect; 3d, *"Needs Manual and Industrial Training"*; many children who are unable to progress in school may become quite efficient workers if trained between the ages of 12 and 16 (suggestions are made as to the particulars of such training, working hours, and quarters in which instruction may be given); 4th, *"Needs Social Supervision and Protection"*; the defective boy, but especially the defective girl, needs the attention which can be given by teacher, school nurse, attendance officer, and by the parents after they have been instructed as to the needs of such protection; 5th, *"The Child May be Delinquent"*; potential delinquents may be recognized at an early age and so handled as to prevent future criminality; 6th, *"Needs Medical Attention"*; in this case the pupil should be referred to a physician or to the proper clinic.

Special reports for each child are made to the local superintendent of schools and to the State Department of Mental Diseases, in the latter case for the purpose of supplementing the census of the feeble-minded in the state. The condition of the individual defective should be recognized in early life, he should be protected from evil influences, trained and educated according to his capabilities, rendered industrially efficient in so far as this is possible, taught correct habits of living and throughout his life be given help and guidance.

PERSONALITY IN THE MENTAL DEFECTIVE, WITH A METHOD FOR ITS EVALUATION

Howard W. Potter, M.D., Letchworth Village, Thiells, N. Y.

Inasmuch as the study of the personality of the mental defective is helpful in furnishing a mental photograph of the individual and gaining an insight into the motives and the significance of his behavior, giving one, in addition, an idea of what the future developments may be, as well as indications for treatment, the author has prepared a guide which may be followed in such investigations. According to this formulation the several components of personality may be studied as follows: intellectual characteristics, sense of responsibility, industrial efficiency, output of nervous and muscular energy, habitual reactions to inferiority, sociability, conduct and behavior, mood, reactions related to mood, special aptitudes and interests, unique and pathological traits. A group of descriptive traits characterizes each of the two or more types recognized under the above general headings. It is a simple matter to check under each division the types that describe the characteristics of any particular case and so to obtain a summary of the whole personality. The "Guide," giving sections, types, and descriptions of types, follows the general plan of that originated by Hoch and Amsden for the purpose of investigating the personality of psychotic cases. It offers a convenient and practical outline for the grouping of facts obtained from various sources in reference to the individual patient.

SOME OF THE PSYCHOLOGICAL MECHANISMS OF HUMAN CONDUCT

Irving J. Sands, M.D., and Phyllis Blanchard, Ph.D., New York City

The three main types of instincts and emotions which are responsible for the behavior of human beings are those concerned in self-preservation, preservation of race, and adaptation to environment. Response to stimulation of these instincts and emotions cannot be eradicated from the personality but the form of its expression can be so modified as to approximate the objective in each of the directions above referred to. The food-getting instinct and the feeling of hunger are the first to be manifested in the life of an individual and are early followed by instinctive reactions to the emotions of fear and anger. Behavior in each instance will depend upon the individual's physical condition, personality, make-up, and his previous experience, as well as upon variations in the stimulus situation. Reaction to a feeling of inferiority may take the form of efforts to demonstrate one's superiority and so compensate for the unpleasant emotion. These efforts may halt within normal limits or be exaggerated so that the attitude becomes aggressive and overbearing, while if compensation fails there may be a regression to a state of complete fear control. Fear has been a dominant factor in the relation of individuals and nations; fear of punishment, fear of destruction have prompted manipulation of environment so that it might be suited to man's needs, a feeling of anger and a belligerent attitude being brought into play as best serving to insure self-preservation.

It has been shown by psychoanalytic studies that the sex instinct is of early development and may be recognized even during the period of infancy, also that many of the sexual abnormalities of adult life are but regressions to infantile tendencies or the failure of these tendencies to develop properly. Race history is intimately concerned with the sex instincts and emotions, while social customs and interests have served both to gratify sex life and to repress its expression at the biological level. Repressed sexual desires may impair the physical and mental efficiency of those unable to sublimate their cravings along useful lines, while perversion of the natural sex instinct may lead to various antisocial acts.

The parental instinct is the second factor in race preservation. The self-sacrifices of the parent and his identification with the child may, however, become detrimental to the latter if carried over beyond the period of childhood and may seriously interfere with the development of self-reliance and individuality. The parental attitude is the most influential factor concerned in the child's future, dominating severity being no less harmful than undue tenderness, both of which may render him unfit to meet the situations of adult life. Race preservation is also promoted by the union of family groups to form communities in which prevails the desire to do and think as one's fellows. This gregarious instinct results in the development of conduct in keeping with that of the various components of the herd and failure to conform is punished by expulsion from the community. This is illustrated by the persecution of those who deviate from the mass, whether they be leaders of religion and science or those with criminal tendencies.

Adaptation to environment necessitates the development of those qualities which are in keeping with the sentiment of the community in which one lives and the suppression of those tendencies which are injurious to its interests. In normal personalities instinctive and emotional impulses are so well balanced that adjustments to new situations are made in a socially approved manner; in others conduct is determined by inadequate or overaccentuated emotional responses. If it is inadvisable for the instinctive and emotional life to function at its natural level, outlets for its activities must be found which do not bring the individual into conflict with group standards, his capabilities must be determined and the environment so manipulated as to afford opportunities for their utilization. Criminal tendencies, sexual immoralities, many nervous and mental disorders, industrial unrest, etc., are evidence of a lack of adaptation of the instinctive and emotional life to the facts of environment. The trend of modern medicine being toward prevention, the causes of maladjustment should be sought for in the earlier years of life and measures instituted which will lead to socially acceptable adaptations.

THE PROBLEM OF THE MENTAL MISFIT IN INDUSTRY

George K. Pratt, M.D., Boston

The World War clearly demonstrated that the individual who fails to adapt himself to a certain environment may become an efficient member of the company under changed conditions. One whose cerebrations are too slow or too uncertain for front-line fighting may render good service in the labor battalion. The same conditions exist in industry as in the military organization, and in order to promote industrial efficiency the misfit must be recognized and his environment be so remodeled as to provide a suitable outlet for his energies. The ignoring of the fact that all men are not equally endowed and have not the same capacity for learning is one of the elements that enters into the making of the industrial misfit. The types of workers are essentially the same as those of which the bulk of the community is composed and as the latter is handicapped by the feeble-minded, the neurotic, the inferior, the psychotic, and those possessed of psychopathic personalities, so must industry contend with the same misfits and develop many shop problems because of them. Properly assigned the mental defective is a satisfactory and valuable worker, improperly assigned he becomes a liability and a menace to himself and to those about him. The emotionally unstable often become disturbing elements in groups of workers because of the inefficiency, irritability, and outbreaks of various kinds which they exhibit, the cause of such conduct being unrecognized. The complaints of the neurotic, the dissatisfaction, maliciousness, and anti-social conduct of the inferior promote industrial unrest, no shop being too small to harbor one or more of these psychopaths and no employer but must deal with the problems for which they are responsible. An additional misfit is the superior workman holding a minor position. Such a worker resents his failure to be promoted, is discontented, and is apt to employ his idle time by stirring up trouble among his fellow workmen.

Mental hygiene has been of great service to society in demonstrating that certain antisocial conduct is dependent upon mental defect, mental disorder or mental traits having their origin in the early years of life. It offers the same service to industry, seeking out the mental misfits, investigating the causes responsible for them, and providing solutions for the problems to which they give rise.

INCIDENCE OF INSANITY AMONG JEWS

Jacob A. Goldberg, Ph.D., New York City

Investigations made during recent years seem to prove incorrect the traditional view that the Jewish race contributes a larger proportion of cases of insanity than does any other. It would be unfair to this race to consider the incidence of insanity in those countries in which the Jew is harassed, forced to endure unusual hardship, and otherwise persecuted, so the present study is based upon admissions to the psychopathic wards of the Bellevue and the Kings County Hospitals, as the largest number of Jews congregated in a limited area is found in New York City. Of the total population of New York State, 16 per cent are Jews, but of the total number of first admissions to the civil state hospitals, during the year 1917, only 11.6 per cent were members of that race. All insane from the City of New York, with the exception of the Borough of Richmond, in which the Jewish population is only 5,000, are admitted to the psychopathic wards of the two hospitals above mentioned. During the year ending August 31, 1918, the Jewish admissions to these hospitals were 16.5 per cent of the total, while for the following year they were 14.5 per cent. As the Jewish population of the city is 25.8 per cent of the total it must be conceded that this race does not contribute an unduly large proportion of such cases.

THE PSYCHIATRIC WORK OF THE NEW YORK PROBATION AND PROTECTIVE ASSOCIATION

Anne T. Bingham, M.D., New York

This report is based upon the examination of 839 women and girls, of whom only 62 were neither delinquent nor presented conduct-problems indicating that future delinquency was probable.

If it is true, as recent psychological investigations seem to demonstrate, that the average intelligence is represented by a mental age of 14 or 15, most of the social ills can no longer be attributed to mental defect. Over 50% of the adolescent delinquents, examined during the course of the present study, exhibited an average mental capacity. Of the 839 persons concerned in this study, 44 per cent possessed a normal, dull-normal or borderline intelligence; 47 per cent were defective or psychopathic; while something in excess of 8 per cent were classed as psychotic, psychoneurotic or epileptic. In assignments to the above groups the psychometric tests were not the sole standard, as individual reaction and make-up were also taken into consideration. One or more neurotic traits, such as convulsions in childhood, excitability, timidity, temper tantrums, sleep disturbances, and the like were manifested by 306 of the patients. These traits were found in 149 of the normal, dull-normal, and borderline cases and in 124 of the defective and psychopathic. Neurotic traits are indicative of an instability which is a large factor in the failure of people, even those of average intelligence, to make the necessary adjustments to their circumstances.

A series of tables give statistical data regarding 539 of the patients examined. The ages ranged from 13 to 25 or more years; 133 were 16 and 132 were 17 years of age. Of the patients, 424 were born in the United States, but in only 147 instances were both parents native-born. The home environment of 345 was unfavorable. The unmarried numbered 475. No previous institutional care was reported in the cases of 384, while 119 had one institutional residence and the remainder had two or more. The degree of education varied greatly, 3 being unable to read or write, while one was a college graduate, 161 had completed the eighth grade in public schools, and 72 had one or more years in high school. Factory operatives comprised 36 per cent of the whole number, domestics 19.9 per cent, and 17.8 per cent held clerical positions. Of those mentally defective, 102 were factory hands or domestics. The weekly wage of only 19 was below $8.00, 102 received from $14.00 to $16.00, while 56 were paid from $20.00 to $30.00 or more.

This study leads the author to conclude that her methods of study and individualized treatment are fundamentally sound; that extra-institutional cases are best treated by establishing a comprehensive, friendly relationship between the girl and some worker; that the colony system of caring for mental defectives should be extended; that a psychiatric clinic should be a permanent department of the Women's Day Court; and that psychiatry has a very real contribution to make to educational institutions.

A SOCIAL ANALYSIS OF A GROUP OF PSYCHONEUROTIC EX-SERVICE MEN

Grace Massonneau, New York City

From the viewpoint of a social worker here are analyzed the cases of 94 ex-service men who suffered from some form of psychoneurosis. The disorders of 43 are designated as "postbellum neuroses," those of 51 having presumably developed during the period of the war. The clinical pictures presented striking similarity and, while the patients appeared to be in good physical condition, they were highly nervous, depressed, unsociable and discouraged, making numerous complaints and anxious that something be done for them, at the same time manifesting no disposition to help themselves. Analysis of their past history shows the average age to be 27 years. Three-fourths of the number were born in the United States and their average educational equipment was represented by the seventh grade of public schools. The average term of employment before entering the service was 7.4 years, the occupations being equally divided between skilled and unskilled labor. About two-thirds entered service by voluntary enlistment, one-third by draft. All except 22 suffered from wounds, gas, injury or illness at some time during the period of service. Military experience showed great variation: one-fifth were never overseas, one-fifth were overseas but never at the front, while three-fifth were actually at the front for shorter or longer periods. As a group there is no homogeneity in the experience of these men, either before or during service, and it cannot be said that any strain or stress peculiar to war service was alone responsible for the conditions exhibited. Few of these men could have been recognized as in any way abnormal previous to enlistment, so it is concluded that there must have been some temperamental or constitutional factor, some peculiar type of reaction or organization of the nervous system which was responsible for the breakdown, and such factors could only be discovered by a searching analysis of the make-up of the individual.

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NOVEMBER, 1922

EDITORIALS

GERMANIUM DIOXIDE IN ANEMIA

Extensive investigations have recently been carried on in the Wistar Institute of the University of Pennsylvania as to the effect resultant upon the administration by hypodermic injection of germanium dioxide in solution. It has been announced that the administration of this chemical compound causes a marked increase in the number of erythrocytes, with a corresponding rise in the hemoglobin per cent.

The compound has recently been employed in a number of cases of pernicious anemia with very gratifying results in all except one case, which died of concurrent or complicating conditions, although both the erythrocytes and the hemoglobin had shown increases.

The investigations had been carried out upon white rats and other animals and the chemical had not been administered to an individual suffering from pernicious anemia until used by Dr. Jesse L. Lenker, of Harrisburg, Pa., who in this issue reports the results obtained in six cases.

Germanium dioxide had been administered to a normal individual before being used by Dr. Lenker, for, after the research workers had established the toxic dose for animals of certain weights and had calculated from this the toxic dose for man, the therapeutic dose for man was estimated by comparison with the relative toxic and therapeutic doses of other chemicals. This therapeutic dose was then administered to one of the investigators with no ill effects.

It has not as yet been definitely announced whether germanium dioxide causes a proliferation of the red bone marrow or simply stimulates the contained erythroblasts to greater activity. If the former, we may hope for a permanent cure for pernicious anemia. If the latter, such hope is faint unless the stimulation be great enough to produce blood of a character that will supply sufficient nutrition to the red bone marrow to enable this blood-forming tissue to return to its normal condition, volume and activity.

There is one other possibility in regard to the action of germanium dioxide, namely: It may cause an inhibitory effect upon the phagocytic cells of the spleen and hemolymph nodes and thus prevent the destruction of the erythrocytes which normally occurs in these organs.

While these points have in all probability not as yet been established by investigation, some of the research workers lean toward the belief that the action is that of simple stimulation, in which case, while the drug may be a disappointment in the treatment of pernicious anemia, it may nevertheless prove very efficacious in the treatment of secondary anemias.

Germanium is an element in some features resembling arsenic but placed by Holland (Medical Chemistry and Toxicology) in the valence IV section with the tin and titanium families. It has a valence of II or IV and its atomic weight is 72.3 (o=16.). The dioxide is insoluble in water and to obtain solution necessitates the addition of an alkali which, however, must be done with caution, for if the solution becomes alkaline to any marked degree it causes pronounced local irritation.

The following method of preparation gives a solution of convenient strength and is but slightly irritating: 0.5 gram of germanium dioxide is added to 122 or 123 c.c. sterile distilled water in a 250 c.c. sterilized wide-mouth, glass-stoppered bottle. Decinormal sodium hydroxide solution (which automatically becomes sterile in three or four days after being prepared) is added with a sterile pipette in quantities of 0.2

to 0.4 c.c. at a time, shaking vigorously between additions. This quantity of the dioxide will dissolve after 2.3 to 2.6 c.c. of the alkali have been added, after which the solution should be tested by placing a few drops in a porcelain dish and adding a drop or two of a 1% alcoholic solution of phenolphthalein. If more than the faintest pink color results the solution should be titrated back with decinormal hydrochloric acid until the faintest possible pink tint is obtained.

The dose is 5 c.c. of this solution corresponding to 4 milligrams of germanium dioxide given hypodermically, preferably (on account of the volume) in the back or upper part of the buttock, at intervals of four days. The interval may be increased as the patient regains strength and the blood picture improves. It is also advised that "periods of rest" of several weeks be taken occasionally throughout the course of treatment, during which the patient receives no injections. The blood picture, however, should be watched very carefully at such times. G. R. M.

NEUROPSYCHIATRISTS

IT'S PYORRHEA

Have you corns upon your toes?
It's pyorrhea.
Have you freckles on your nose?
It's pyorrhea.
When you hurry do you wheeze?
Are you shaky at the knees?
Are you getting hard to please?
It's pyorrhea.

Have you specks before your eyes?
It's pyorrhea.
Has your head increased in size?
It's pyorrhea.
Are you restless when at home?
Are you bald upon the dome?
Did you ever write a poem?
It's pyorrhea.

Is your liver out of whack?
It's pyorrhea.
Have you pimples on your back?
It's pyorrhea.
Are you itchy anywhere?
Have you dandruff in your hair?
Have you any cash to spare?
It's pyorrhea.—*From Dental Digest.*

Although a burlesque exaggeration, the above verses express quite graphically the tendency of some sections of the medical profession to be overwhelmed by passing fads and fancies. One does not have to practice medicine many decades to pass through several waves of enthusiastic exploitation of some new and marvelous cure-all, soon relegated to the scrap heap as of doubtful value. So it is with focal infection, especially that connected with the teeth.

Focal infection undoubtedly may be a real etiological factor in some obscure conditions. Removal of such foci of infection often results in almost miraculous cures and this very fact is apt to mislead the unwary into making universal application and extravagant claims.

Reed of Ohio, who once hailed himself as the discoverer of the Bacillus epilepticus but who had to acknowledge later his mistake, is now breaking into print again on the subject of "focal infection, epilepsy, insanity and asylum reform." By a system of propaganda addressed largely to a lay audience, Reed apparently prefers to ignore those who are most likely to know something about the subject. By the very terms he uses, e. g., "asylum reform," he shows a painful and surprising lack of information as to the equipment, methods of examination and treatment of a modern hospital for mental patients. Such hospitals, worthy of the name (and there are many) are equipped often better than the average general hospital in respect to diagnostic laboratories and therapeutic aids such as the x-ray, dental and general surgical facilities and so on.

But there is nothing new in all this propaganda, especially as regards mental patients. Cotton, of the Trenton, N. J., State Hospital, has for several years been writing on this same subject. Partially as a result of his association with an ex-newspaper man, Cotton and his work have been given unusual and objectionable publicity by means of illustrated articles in the magazines and less conservative Sunday papers. Such practices, although undoubtedly profitable in a pecuniary way, together with an apparently studied effort to disparage generally the work of his colleagues, have resulted in a serious doubt as to a rational basis for Cotton's extravagant conclusions.

Neuropsychiatrists in various localities are further convinced that Cotton's claims are unsubstantiated by meeting in their practice from time to time a number of his so-called "cures."
J. M. B.

INCREASING MORTALITY FROM CIRCULATORY DISEASE

There can be no doubt that the hurry and strain of modern life is conducive to heart disease, and the warning applies to all our communities. The prevention of diseases of the heart and the circulatory system has only recently begun to claim its share of attention. While records of life insurance companies and other statistics show 1921 to have been the healthiest year with an extraordinary drop in the death rate from pulmonary tuberculosis, organic diseases of the heart have shown such appreciable increase as to make heart disease one of the outstanding public health problems.

Organic heart disease and endocarditis and cerebral hemorrhage have increased. The effective campaign against tuberculosis conducted in recent years, encourages us to believe that similar efforts in education for the prevention of heart and circulatory diseases will accomplish equally good results.

Too much emphasis cannot be given to the fact that early diagnosis of pathologic conditions in the heart is urgently needed. We should constantly be on the lookout for the early indications of circulatory diseases before real pathology has occurred. Such early symptoms as persistent hypertension, dyspnea, edema, pain in the precordial region; or the cerebral symptoms of vertigo or faintness; or the gastro-intestinal symptoms of flatulence, and especially in men past fifty years of age who come to our offices with the self-made diagnosis of dyspepsia because they have distress after eating, which is relieved by eructation of gas. This history should always arouse our suspicion because many embarrassing mistakes have been made by accepting the patient's diagnosis, when really a heart condition was the cause of the apparent indigestion. The recognition of these early indications of cardiac insufficiency is urgently needed, not only to protect the individual from various forms of strain, but also in industrial life to warn against placing these individuals in positions where their failure may endanger the lives of others.

Mortality from heart disease has increased because the affected individuals are not able to meet the strains of life, which we physicians can lessen by timely advice and warning. J. B. McA.

POSTGRADUATE TEACHING IN COUNTY MEDICAL SOCIETIES

It has become a custom for county medical societies in Pennsylvania to publish a "Bulletin" or "Leaflet" at regular intervals. The members are thus furnished with notices of the meetings, the programs of scientific business and short articles on professional topics. These miniature journals, the offspring of the State Society Journal, have an intrinsic value to the practicing physicians of the commonwealth.

Any one who has the opportunity to scan the pages of these issues each month, picks up a surprising amount of interesting information. New therapeutic hints, new views in pathology, new opinions in medical sociology and varying ideas on ethical conduct are met during perusal of the items in these journalistic infants. The initial force which gave birth to these local literary efforts deserves much credit; and the editors of them are rendering a distinct service to their respective medical communities.

A similar and even wider influence for professional growth would be fostered by general adoption in the county societies of a series of postgraduate clinics and lectures. The staffs of some of the hospitals in Pennsylvania have carried on such study classes, and a committee of the Medical Society of the State of Pennsylvania, a decade ago, was active in assisting county medical societies in obtaining lecturers, operators, and what would now be called "forum" leaders.

The State Medical Society through such a committee could easily arrange to supplement the work of the weekly or monthly "forum" by sending from town to town a half dozen books on the topic being studied. Such traveling libraries have been of value in stimulating culture in other departments of science and art. Why should county medical societies not adopt some such method in medicine? To follow the lead indicated by the correspondence schools, the Chautauqua assemblies and the University extensions would merely require a stimulating secretary in each county and an active chairman, or bureau chief, in the executive work of the State Medical Society. J. B. R.

Now is the time for all good doctors to come to the aid of their cardiac cases by warning them against muscle overstrain, such as walking against high winds, tramping through the snow, shoveling snow, or prolonged exposure to the cold whereby chilling of the body may ensue, with the possible development of pneumonia.

A. C. M.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

COMPARISON OF THE MEDICAL MAN WITH MEN OF OTHER PROFESSIONS

In an extensive acquaintanceship among medical men I have found but a very small percentage who could be credited with having a well-balanced business side, and indeed it has always been an open question in my mind as to just why they had adopted this profession. Surely, they were not dominated by a mercenary motive, as the remuneration is so small that it is difficult to see how the ordinary medical practitioner makes ends meet. This being the case, the only solution to the problem is that they have adopted this calling with the sole desire of serving humanity, as few of them get rich.

Let us compare the average medical man with the same type of citizen in another profession. The medical man can hardly make an existence while pursuing his studies, and with all the requirements necessary for him to qualify he will have reached the age of 27 or 28 years before he is able to "hang out his shingle" and conduct his business. No matter what size town he locates in he will be several years building up a clientele and meanwhile he is subject to call at any hour of the day or night.

He must conduct an office at an address situated in a fair, decent locality, and in addition to the equipment necessary to his profession, he should have some means of conveyance, preferably a motor car, even though it be of the "Lizzie" type. Everyone in the neighborhood looks up to him as a prosperous citizen and he has to live up to this reputation even though at a cost of self-denial.

Probably after many years of this kind of life he may rise to the dignity of receiving fees running up into the hundreds of dollars, but the greater number of instances show that he is fortunate to receive only single dollars. Indeed, where there is one doctor who can get hundreds, there are hundreds of doctors in the latter class where a $10.00 fee is regarded as magnificent.

Then, there are many doctors who have to provide medicine to go with the fee, and this is another addition to the overhead. Without being in a position to know definitely, I should figure that after the ordinary doctor has paid his legitimate and necessary expenses he will be fortunate if at the end of the year he can figure his actual earnings at $2,000 per year. And it must be borne in mind that this does not begin until he has reached his thirtieth year.

Now, let us look upon the other side of life. In business the salesman who is at all fit can easily knock out a salary of $3,000 to $5,000 annually. The mechanic can command at least $2,000, with pay as an apprentice while learning his trade, which the doctor does not get. If a man is only of mediocre ability in commercial life he can figure in the $3,000 to $10,000 class, and even the skilled laborer will overtop the physician in his earnings. Let us take the street car employee as an illustration. In Philadelphia the scale is now 62c per hour for motormen and conductors. Most of them work ten hours a day and 313 days a year, and at this rate they receive over $1,900 annually in wages. This gives them 14 hours a day for themselves and at least one day off in every seven. No preliminary education is necessary to fill this post and perform the duties, and it is true that not many of these men have much more than a common school education. When the day's work is over there is nothing to think of except amusement, relaxation and a full night's sleep, but with the physician he never knows when or at what hour he is going to be called upon to administer to suffering humanity.

The question, therefore, recurs that if the professional man looked upon his profession from a strictly business viewpoint he would demand much larger fees than those he receives at present, and looking at the matter from a layman's side, I am at a loss to understand why some step was not taken long ago by medical men looking to the stabilizing of their fee charges.

It may be, however, that they are deterred from such a stand, fearing the charge of commercialization. On the other hand, it may be that they love their profession too much to regard it from a strictly business angle.

Philadelphia. Robert Haight.

"JUST BE THE BEST"

If you can't be the pine on the top of the hill,
Be a scrub in the valley—but be
The best little scrub at the side of the rill;
Be a bush if you can't be a tree.
If you can't be a bush, be a bit of the grass,
Some highway to happier make;
If you can't be a muskie, then just be a bass—
But the liveliest bass in the lake!
We can't all be captains, we've got to be crew,
There's something for all of us here;
There's big work to do, and there's lesser to do,
And the task we must do is the near.
If you can't be a highway, then just be a trail,
If you can't be the sun, be a star.
It isn't by size that you win or you fail,
Be the best of whatever you are.

(From the February-March issue of *Hospital School Journal.*)

THE MAN AND HIS JOB

BY JOHN L. SHORY

I haven't much faith in the man who complains
Of the work he has chosen to do;
He's lazy or else he's deficient in brains,
And maybe a hypocrite, too.
He's likely to cheat and he's likely to rob;
Away with the man who finds fault with his job.

But give me a man with the sun in his face,
And the shadows all dancing behind;
Who can meet his reverses with calmness and grace,
And never forget to be kind;
For whether he's wielding a scepter or swab,
I have faith in the man who's in love with his job.

(From the March-April, 1922, number of *Trained Men.*)

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

KEEP THIS COPY OF THE JOURNAL

This number of the JOURNAL contains the minutes of the 1922 session of our Society. It is therefore an unusually valuable number and worthy of care. The minutes referred to include a record of all general and sectional sessions and of the House of Delegates. The minutes of the latter contain in full the Constitution and By-Laws under which we now function, thus affording an opportunity for each of our seventy-two hundred and seventy members to retain for future use a fully revised copy.

Section 3 of Chapter VI of the By-Laws, and paragraphs four and five of Section 6 of Chapter V, in all probability contain the greatest potentialities for progress that occur among the various 1922 revisions.

The minutes of the House also contain in full the adopted report and recommendations on the application of University Extension methods to Postgraduate Medical Education. This report might with profit be made the subject for discussion at an early meeting of many component county medical societies.

Life-saving results from our efforts to diminish the use of wood alcohol in the industries are apparent in this year's report of the Committee on Conservation of Vision.

The minutes of the general meetings contain a timely discussion on the abuses of the Pennsylvania Workmen's Compensation Act, as well as a comprehensive résumé of the beneficent functions of the American Medical Association.

Every interested officer, committeeman and member should carefully read the complete Transactions published in the November number and preserve his copy for future reference.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to October 19:

ALLEGHENY: *New Members*—Joseph S. Baird, 402 N. Highland Ave.; Lawrence G. Beinhauer, 5026 Jenkins Arcade; Harold A. Elder, 4903 Baum Blvd.; Alice M. Fasold, 343 S. Rebecca St.; Ray R. Hetherington, 6966 Bennett St.; Carl F. Nill, 1110 Rebecca St., N. S.; John A. O'Donnell, 7 Boggs Ave. (Mt. Washington P. O.), Pittsburgh. *Deaths*—William S. Foster (Jeff. Med. Coll., '66), of Pittsburgh, Sept. 17, aged 81; H. Milton Smith (Ohio Med. Univ., '03), of McKeesport, Sept. 18, aged 49.

BEAVER: *New Member*—Olen J. Stevenson, Beaver.

CARBON: *New Member*—John E. Barsby, Nesquehoning.

CLINTON: *New Member*—Reuben H. Meek, Avis.

CAMBRIA: *Reinstated Member*—J. Swan Taylor, 408 Franklin St., Johnstown. *Transfer*—Ray Parker, 424 Main St., Johnstown, from Philadelphia County Society.

DAUPHIN: *Death*—James E. Rhoads, of Harrisburg, Sept. 9.

DELAWARE: *New Members*—Helmar A. Stecher, Brookline, Upper Darby P. O.; Percy J. Craig, 427 E. Broad St., Chester; Hugh Brown, Collingdale.

ERIE: *New Member*—J. Elmer O'Brien, 302 E. Tenth St., Erie. *Reinstated Members*—Jesse C. Stilley, Ludlow (McKean Co.); Joel M. Peters, Albion; Llewellyn O. Howe, 604 Victory Road; Richard D. Dalrymple, 215 W. Seventh St.; James R. Smith, 730 W. Eighteenth St., Erie; C. W. Hotchkiss, Wesleyville.

ELK: *Death*—Russell P. Heilman (Jeff. Med. Coll., '76), of Emporium, recently, aged 72.

FAYETTE: *New Member*—R. C. Hough, High House. *Reinstated Member*—J. Pollard La Barre, Uniontown. *Death*—Edwin R. Ralsey (Med. Chirurg. Coll., Phila., '91), of Uniontown, July 12, aged 55.

FRANKLIN: *Death*—John J. Coffman, Dartmouth Med. Coll., '82), of Scotland, Oct. 4, aged 71.

LAWRENCE: *Transfer*—Benjamin M. Berger, of New Castle (formerly of Pittsburgh), from Allegheny County Society.

LACKAWANNA: *Reinstated Members*—Nellie G. O'Dea, 160 So. Main Ave.; P. John O'Dea, 169 So. Main Ave.; John J. Sullivan, Sr., 2206 Wayne Ave., Scranton. *Removal*—Robert B. Mackey from Waverly to 45 Lake Ave., Montrose (Susquehanna Co.).

LEBANON: *Reinstated Member*—John D. Boger, Richland.

LUZERNE: *Death*—Edward C. O. Wagner, (Univ. of Penna., '90), of Wilkes-Barre, July 9, aged 56.

MONTGOMERY: *Reinstated Member*—Howard Y. Neiman, 319 King St., Pottstown. *Transfer*—Robert R. Janjigian, of Wilkes-Barre, to Luzerne County Society.

NORTHAMPTON: *New Member*—Louis F. Burkley, Jr., 362 Berwick St., Easton.

PHILADELPHIA: *Reinstated Members*—William D. Barry, 1827 Greene St., Gtn.; Edward V. Clark, 2001 Chestnut St.; Cunningham P. Clark, 2001 Chestnut St.; Richard F. Gerlach, 1526 N. Fifteenth St.; Alexander L. Gillars, 5830 Girard Ave.; De Haven Hinkson, 329 N. Fortieth St.; Warren H. Johnston, 1413 So. Fifty-Eighth St.; William J. F. Martin, 2022 N. Broad St.; Thomas H. Price, 4928 Frankford Ave.; William S. Schantz, 5100 Warnock St.; Harry Tulsky, 2026 So. Eighth St.; William M. Weber, 119 So. Eighteenth St.; Alfred C. Marshall, 610 So. Twenty-Second St.; Charles S. Pancoast, Greene and Harvey Sts., Gtn.; William J. Ryan, 1941 Snyder Ave., Philadelphia; Joseph P. Tunis, Churchville (Bucks Co.); Louis E. Artman, Kernan Hospital, Hillsdale, Md. *Removal*—Clinton A. Kane from Philadelphia to Suffolk, Va.; Walter S. Riegel from Lebanon to Shenandoah; J. K. Williams Wood from Philadelphia to Davisville Road, Willow Grove (Mont. Co.); Ray Parker from Philadelphia to 424 Main St., Johnstown (transferred). *Deaths*—Frank Fisher (Jeff. Med. Coll., '75), of Philadelphia, Sept. 5, aged 68; Alice H. B. Milligan (Women's Med. Coll., Phila., '12), of Philadelphia, Sept. 4, aged 49; A. Rusling Rainear (Jeff. Med. Coll., '82), of Philadelphia, Oct. 8, aged 63.

Somerset: *New Member*—Ralph E. Conn, Summerfield. *Reinstated Member*—Bradley H. Hoke, Meyersdale.

Washington: *New Member*—Paul F. Eckstein, Canonsburg.

Westmoreland: *Death*—William J. Haymaker (Jeff. Med. Coll., '90), of Export, June 21, aged 58.

York: *New Member*—I. Ziegler Wentz, Hanover.

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
212 N. Third St., Harrisburg, Pa.

MEDICINE AND POLITICS

It goes without saying that whenever legislation is referred to, it is associated with a large amount of politics prior to the time of the session of the legislature. The November election is over and the people of every county in this state now know who will represent them in the House of Representatives and the Senate during the 1923 Session of the Legislature.

We propose to continue our endeavor to reach these representatives and senators and advise them that the medical profession of this state is interested in legislation. We should be and are interested in all types of legislation that are of interest and benefit to the people of this commonwealth, but we are particularly interested in advocating legislation that will benefit the people by protecting them from those who would impose upon their credulity by practicing methods which have been proved valueless.

We are also anxious to see that legislation enacted shall be just and right to all parties concerned. It is for that purpose that we are again urging the members of the Medical Society of the State of Pennsylvania to realize the need of keeping before the officials who will create laws in Harrisburg this winter the fact that the medical profession is to that extent in politics.

We have been asked frequently what to say to the member of the House or Senate when conversing with him upon the subject of medical legislation. Some time ago a pamphlet was sent to the entire profession which stated:

WE FAVOR:

"All legislation to be proposed by the State Department of Health calculated to improve the prevention and control of all diseases; better hygienic and sanitary regulations regarding milk, water supply, foods, etc.

"Coördination of all boards relating to the healing art instead of having these very important functions scattered about, as now, in several boards and bureaus when they should function under one head. By this method all those having to do with the healing art can present their claims to the State Legislature with a solid front."

WE OPPOSE:

"Any movement calculated to curtail the vivisection of animals for scientific research and study.

"Any bills preventing vaccination and the use of antitoxins and serums.

"Granting to any cults separate examining boards unless the educational qualifications are of a minimum equal to those already existing.

"Any legislation providing for compulsory state health insurance or subsidized state medicine."

In addition to what appears in the above and in view of recent decisions regarding the Workmen's Compensation Act, it behooves every member who is engaged in industrial surgical practice to assist the Conference and this office in endeavoring to correct the evils which apparently exist in the Workmen's Compensation Act. To that extent the representatives and senators should be told that the medical profession has not had a fair deal.

True, all the members of the profession doing industrial surgery are not affected by the Workmen's Compensation Law because many are employed by corporations, which carry their own insurance and conduct the business in a way which is entirely satisfactory. It is, however, the few cases that point out the need of correcting the law so that it shall work no hardship either to the hospital or the doctor.

There will no doubt be considered during the coming session of the legislature a large number of bills in which the medical profession is directly or indirectly affected. In all of these the senator and legislator should seek the advice of those who represent the medical profession in Harrisburg, and it will be the endeavor of these representatives to keep the profession back home informed of every move so that they will be able to reassure their representatives of the aid of the medical profession in legislative problems.

Don't forget that it is as much your business to keep wide awake this coming year as it is the business of those to whom you have entrusted the legislative program, because without your help, no one, two, or a dozen representatives will avail much during that session.

COMMUNICATIONS

State of New York, Department of Health
Albany, October 21, 1922.

To the Editor:

At the Annual Conference of Health Officers and Public Health Nurses of New York State held at

Saratoga Springs, last June, I referred to the importance of periodic physical examinations, which I have long advocated as a means for the preservation of health and the prevention of diseases through early recognition and correction of defects and abnormal conditions. Comments which have since appeared in a number of newspapers indicate that serious misconception exists in some minds as to the purport of my remarks. The impression seems to have arisen that I favor an official scheme of compulsory physical examinations, to be conducted by health officers or other physicians employed by the public authorities, with the implication that every man, woman and child should be required to submit to such a periodical inquest into his or her physical condition.

It does not seem really necessary to explain that I agree heartily with the critics of any such proposal, and that I never have and do not advocate any kind of compulsory state medical inspection of the individual citizen, except as such inspection is now carried on practically everywhere in our public schools and in charitable and penal institutions. A prying inquest by public authority into the physical condition of the adult citizen would be utterly repugnant to American ideas of individual rights, and of the proper sphere of government. The worst enemy of periodic medical examinations could choose no better means of making his opposition effective than to advocate such a fantastic plan as seems to have been read into my address at Saratoga.

So much having been made clear, I ask space to repeat my conviction that nothing is more important for the citizen who cares to keep well than that he should go of his own free will to his own physician and demand thorough examination at reasonable intervals, with the application of all the resources of modern scientific medical knowledge. This means not merely a hasty examination of the heart and lungs with the stethoscope, but a complete medical survey, including various special tests of the blood and excretions, examination of the eyesight and hearing, as well as of the nose and throat, and often accompanied by an x-ray of the chest or other parts of the body. Adequate examination also means taking into account mental as well as physical factors, and basing conclusions on a full knowledge of living and working conditions, income, habits, recreations, and the pertinent facts of family and personal history.

It must be obvious that such examination and advice based on it can be properly made and given only under the conditions of freedom and intimacy which are implied in the relation of the individual to his family physician. For the state to attempt thus to examine its citizens would be not only intolerable but futile, since the utmost degree of confidence and coöperation on the part of the patient is required if anything is to be accomplished. The best trained modern physicians are equipped to examine and advise their clients how to keep well, and rightly expect to be consulted for this purpose and not merely to attempt the cure of an established disease. Perhaps it is not true that the Chinese pay their doctors only to keep them well, but if this popular legend is not based on fact it was at least well invented, for it expresses the essence of the coming system and practice of civilized society. As was said recently in one of our radio health talks, "The human body is the only machine for which there are no spare parts." We must learn rightly to use and carefully to safeguard those which we have. And we can best do this by picking out a competent medical adviser, consulting him frequently, believing what he says, and following his counsel. If we do this as free individuals the health of the state will largely take care of itself.

Hermann M. Biggs,
State Commissioner of Health.

THE EDITOR OF THE PENNSYLVANIA MEDICAL JOURNAL

Dear Sir:

I feel that I owe to the State Society an explanation of my absence from the meeting at Scranton, where I was scheduled to show a moving picture of Cesarean Section. The night before I was to leave, sudden illness in my immediate family made me change all my plans. I immediately telegraphed and wrote to the chairman of the section before which the paper was to appear, explaining the reason for my absence. It was all I could do at the time, as the illness was of such a nature that I was not justified in leaving town.

I wish this letter could be published in the correspondence section of the State Medical Journal, as I do not wish to be thought needlessly discourteous in my absence from a meeting where I was scheduled to appear. With best regards believe me

Very sincerely yours,
John C. Hirst.

Philadelphia, October 21, 1922.

IN MEMORIAM

DR. JONATHAN L. FORWOOD

Whereas, The mantle of Jonathan L. Forwood has been laid down and our leader has departed this life, we subconsciously realize that a powerful pillar has been removed and the mighty oak has at last fallen.

Dr. Forwood was an outstanding figure in surgery for well over half a century, in his prime in the days of Agnew, Goodell, and Price, but operating until five years ago and actively presiding at all meetings of the staff of the Chester Hospital, of which he was the beloved chief surgeon when ninety years of age. The influence of this man's towering personality has advanced the surgery in our county to its present standing, since nearly every surgeon practicing in this community for the past generation has received not only his actual training but his inspiration from Dr. Forwood. A rugged, fearless, vivid character combined with laborious days of hard study and repeated observations enabled him to arrive at conclusions which to the less experienced appeared classic. Of the sturdy type who believed the main responsibilities of his profession rested upon the individual and that to shrink from its weight only made the burden grow doubly heavy; therefore, refusing to short-cut for success he carried to the end his cares with an abiding dignity. Such a dominating figure was Jonathan L. Forwood. Therefore, be it

Resolved, That we express our deep sorrow for the loss of a great physician and that we offer our profound sympathy to Mrs. Forwood, who played no small portion in his success in life by her stimulation, sympathy and tender care.

Henry Marshall Armitage,
Alexander R. Morton,
J. Harvey Fronfield,
Committee.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacoh A. Trexler, M.D., Lehighton.
Center—James L. Siebert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenhaugh, M.D., Carlisle.
Dauphin—Maude C. Exley, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—John J. Coffman, M.D., Scotland.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—James M. Torrence, M.D., Indiana.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederick R. Bausch, M.D., Allentown.
Luzerne—C. L. Shafer, M.D., Kingston.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Mary A. Hipple, Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—H. D. Washhurn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

November, 1922

COUNTY SOCIETY REPORTS

ALLEGHENY—JUNE

The regular monthly scientific meeting of the Allegheny County Medical Society was held on June 20, 1922, 8:30 p. m., at the Chamber of Commerce Auditorium, Pittsburgh, Pa., with the president, Dr. Walter F. Donaldson, in the chair. Attendance, 121.

The president announced the appointment of the following committees:

Scientific Program Committee: Dr. J. J. Buchanan, Mercy Hospital, Chairman; Dr. A. R. Matheny, East End Trust Bldg.; Dr. E. A. Weiss, Jenkins Bldg.

Branch Organization Committee: Dr. S. L. McCurdy, Jenkins Arcade Bldg., Chairman; Dr. C. G. Eicher, McKees Rocks, Pa.; Dr. D. P. McCune, Masonic Temple, McKeesport, Pa.

Public Health Legislation Committee: Dr. T. G. Greig, 1501 Carson St., South Side, Chairman; Dr. R. G. Burns, 3330 Perrysville Ave., North Side; Dr. N. P. Davis, 1405 Fifth Ave.; Dr. J. G. Steedle, McKees Rocks, Pa.; Dr. M. E. Stover, 519 Allegheny Ave., North Side.

Sanitation Committee (this committee chooses its own chairman and secretary): Dr. E. B. Heckel, Jenkins Bldg.; Dr. R. L. Hill, Woodville; Dr. E. W. Willetts, Diamond Bank Bldg.; Dr. L. Litchfield, Jenkins Arcade Bldg.; Dr. C. J. Vaux, City-County Bldg.; Dr. J. M. Thorne, Jenkins Arcade Bldg.; Dr. J. W. Macfarlane, Westinghouse Bldg.

Finance Committee: Dr. J. A. Hawkins, Jenkins Arcade, Chairman; Dr. E. E. Wible, Diamond Bank Bldg.; Dr. K. I. Sanes, Jenkins Bldg.

Medical Relief Committee: Dr. W. S. Foster, 252 Shady Ave., Chairman (elected); Dr. L. C. Botkin, 27 Prospect Ave., Ingram; Dr. Paul Titus, Highland Bldg.

Committee on Necrology: Dr. T. W. Grayson, Jenkins Arcade Bldg., Chairman; Dr. J. W. Boyce, Jenkins Arcade Bldg.; Dr. R. T. Hood, Diamond Bank Bldg.

Membership Committee: Dr. H. H. Donaldson, Union Arcade, Chairman; Dr. H. S. Arthur, 627 Walnut St., McKeesport; Dr. G. F. Berg, 858 Lockhart St., North Side; Dr. G. S. Bubb, 146 Greydon Ave., McKees Rocks, Pa.; Dr. N. R. Graham, 1304 North Canal St., Sharpsburg, Pa.; Dr. A. H. Gross, 688 Forest Ave., Bellevue; Dr. Milton Goldsmith, 5802 Beacon St.; Dr. W. B. Harvey, 1440 Western Ave., North Side; Dr. J. M. Jackson, 1543 Denniston Ave.; Dr. C. C. Marshall, 427 Charles St., Knoxville; Dr. H. H. Meanor, Coraopolis; Dr. C. B. Norcross, Clairton; Dr. C. K. Shanor, 333 Beaver Ave., Sewickley; Dr. J. J. Buchanan, Mercy Hospital.

Milk Commission: Dr. A. S. Daggette, 400 South Craig St., Chairman; Dr. Luba R. Goldsmith, 5802 Beacon St., Secretary; Dr. V. L. Andrews, West Penn Hospital; Dr. H. J. Benz, 809 Grandview Ave.; Dr. P. J. Eaton, Highland Bldg.; Dr. J. D. Iams, 2863 Chartiers Ave.; Dr. T. J. Elterich, 725 Highland Ave.; Dr. H. A. Miller, Pittsburgh Life Bldg.; Dr. W. W. G. Maclachlan, 1133 Wightman St.; Dr. H. T. Price, Westinghouse Bldg.; Dr. D. G. Richey, Mercy Hospital; Dr. M. Spiro, 1457 Barnsdale St.

Dr. E. L. Neff read the report for the Committee on Necrology, and the Secretary read a proposed amendment to the By-Laws, after which Dr. E. R. Wiese presented a paper on "The Values of the Schick Test in a Local Institution; Some Personal Observations."

The value of antitoxin as a therapeutic agent in diphtheria is such as to classify it among the specifics of modern medicine. Inasmuch as its potency as an immunizing principle is but transient, its use as such is of value only in urgent cases. By use of the Schick test the susceptibility or immunity of an individual to diphtheria may be absolutely determined. The result of the Schick test is the individual's reaction to a minute quantity of diphtheria toxin—properly diluted —injected into the skin.

Trustworthy results depend upon three factors: 1. The material must be of standard strength. The material injected must be sufficiently powerful to produce a reaction but not be so concentrated as to produce sloughing. 2. The method of injection must be correct. The injection must be made into the skin. One-tenth of one ccm. of properly diluted toxin is injected into the skin of the right forearm. The same amount of toxin control (toxin heated to 75 C. for ten minutes) is injected into the skin of the left forearm. 3. The interpretation of the results must be accurate. Four results are possible: positive, negative, pseudo-positive, and pseudo-negative. Pseudo-reactions, which make their appearance and fade more rapidly than do true reactions, are due to the individual's unusual susceptibility to the autolyzed protein of the diphtheria bacillus. They amount to but a slight discoloration by the time the genuine reaction has reached its height—the end of three and a half to five days.

Toxin-antitoxin is injected deep into the tissues of those giving either a positive or a pseudo-positive reaction. Treatments at intervals of seven days are given, until three such have been administered. Severe reactions, while not common, are not rare. Immunity thus conferred extends over many years. Four hundred and seventy-eight cases were Schicked and were given toxin-antitoxin. Three gave reactions severe enough to confine them to bed for several days. Prior to the introduction of the Schick test and toxin-antitoxin, quarantine of the different cottages of the school where it was used, was not uncommon. Since the use of the Schick test and toxin-antitoxin, there has not been a case of diphtheria in the institution, although exposure has not been wanting, as several of the boys who had been in immediate contact with the other boys for months, were found to be carriers of the diphtheria bacillus, when subjected to a routine examination in hospitals to which they had been sent because of surgical ailments. This paper was discussed by Dr. H. J. Benz.

Dr. Clement R. Jones's presentation was entitled "Present Status of Biliary Drainage."

Dr. de W. G. Richey read "Presentation of Specimen of Exstrophy of Bladder Thirteen Years After Transplantation of Ureters Into the Rectum." In 1909 J. J. Buchanan published an exhaustive article on the remote results of implantation of the ureters into the bowel for exstrophy. He was able to collect 99 such cases, including two of his own. Of these, 11 died subsequently, of ascending renal infection, while 64 were well at the time of publication, 13 of which were within one year, 26 between 1 and 3 years, 10 between 3 and 6 years and 15 between 6 and 12 years after operation. One of these cases incorporated in Dr. Buchanan's report was a boy, then 3 years of age, who had a typical exstrophy of bladder with an associated complete epispadias, widely separated anterior pubic bones and undescended testicles. In 1908 Dr. Buchanan implanted the ureters, with rosette of bladder attached, into the anterolateral walls of the rectum after the method described by Bergenhem. For the next twelve years the boy enjoyed a comfortable existence, being able to retain urine in his rectum for about four hours. Nothing of a serious nature happened until 1920, when the patient presented himself with a left-sided pyonephrosis, which was drained. Two years later and almost 14 years after the rectal implantation of the ureters, the lad returned with a right-sided pyonephrosis and perinephric abscess. This, too, was drained, the patient dying four days later.

At autopsy, although the youth was over 16 years of age, he did not appear to be more than six. The penis was small and was directed upwards to lie in the depression between the united ends of the pubic bones over the scar tissue occurring at the previous operative site where portions of the exstrophied bladder had been excised. Both kidneys were small, the left one being smaller than the right. The left kidney was embedded in a large quantity of dense scar tissue, which was particularly abundant around the pelvis. On section, virtually the entire renal structure was destroyed, being supplanted by a fibrous connective tissue which had impinged upon the pelvis, almost completely excluding it. Remnants of dilated calices were seen in various-sized cyst-like cavities. To the surface of the right kidney was adherent a thick, yellow pyogenic membrane, which formed one wall of the perinephric abscess. Beneath this, as well as in other portions of the organ, were large, dilated calices, connecting with a distorted pelvis in which a modern-sized "stag horn" calculus lay. This concretion formed a cast of the pelvis. The linings of the cavities were smooth, glassy and engorged. All the renal tissue which remained between the cavities contained radiating yellow streaks of purulent material. Both ureters were large, tortuous and dilated, being surrounded by many fibrous adhesions. They measured 1.6 to 4 mm., due to an extensive fibrosis at this point. The ureters were thick-walled and the mucosa was thick and velvety. Their lumina contained a thick, chocolate-colored, foul-smelling pus. In this, as well as the material from the perinephric abscess, B. coli communis, and staphylococcus aureus were found. When the intact rectum was filled with water, the ureters immediately and rapidly became filled by the hydrostatic pressure, indicating neither a valvular nor sphinxteric action at the site of implantation. The rectum was distinctly dilated, being bladder-like in outline. This represented a compensatory mechanism whereby a representative quantity of urine could be retained. The rectal and sigmoidal mucosa was healthy, while in the descending colon, the mucosa was rough and granular.

The case was unique in many ways and, when viewed in its entirety, the wonder is not that these cases die of ascending infection, but that some are able to withstand it for such a length of time. Certainly, in exstrophy of the bladder the surgeon finds himself between Scylla and Charybdis, where of many evils he must choose the least.

I am indebted to Dr. Buchanan for the privilege of showing this specimen and for the clinical records.

Drs. Buchanan, McCurdy and McGuire discussed this paper.

Dr. F. H. Rimer presented "Diagnosis of the Common Exanthemata," which was discussed by Drs. Litchfield, Stybr and Neff.

Dr. Stewart L. McCurdy read a paper on "Bone Lesions," illustrated by lantern slides. This presentation was discussed by Drs. Weinberg and Litchfield.

LESTER HOLLANDER, Reporter.
Per S. H. B.

CHESTER—OCTOBER

The regular meeting of the Chester County Medical Society was held at the Phœnixville Hospital on October 17th, with President W. W. Betts in the chair. The meeting was preceded by a delightful luncheon prepared by the superintendent, Miss Worrest, and her assistants.

After a short business session the society listened to a most interesting and instructive address by Dr. Percival Nicholson of the University of Pennsylvania on "Postural Defects in Children," illustrated by lantern slides.

Without going into the details of Dr. Nicholson's address we wish to state that seldom has the society been favored with a more valuable contribution to medical research. The facts brought out were that there are innumerable children who, by reason perhaps, of a long illness or a protracted period of malnutrition, start their lives with the handicap of relaxed abdominal muscles, which allows of the development of gastroptosis and enteroptosis with the concomitant pendulous abdomen and resulting spinal curvature. By reason of the interference with the proper emptying of the stomach, and the favoring of intestinal stasis by kinking of the colon, these children suffer from periodic outbreaks of "bilious attacks," "acidosis," etc. A vicious circle is thus formed and the children go through the early years of life poorly nourished, anemic, nervous and mentally incapacitated.

By an ingenious contrivance which mechanically supports the lower abdomen, and at the same time braces the over-curved spine, children who have for years remained undernourished and weak rapidly take on weight and become sufficiently improved physically within a few months to be able to dispense with the mechanical support.

Dr. Nicholson laid special emphasis on the importance of rest periods during each day for such cases. This routine of rest enables the weak abdominal muscles to regain their normal tone. Later, very carefully graduated exercises are begun which tend to strengthen the muscles and permit of their taking up their natural function of abdominal support when the mechanical brace is dispensed with.

Dr. Nicholson's paper was discussed by several of the members present, after which a hearty vote of thanks was extended to him. A vote of thanks was also extended to the Phœnixville members and the staff of the Phœnixville Hospital.

Henry Pleasants, Jr., Reporter.

MONTGOMERY—OCTOBER

The regular meeting of the Montgomery County Medical Society was held October 11, 1922, at Montgomery Hospital, Norristown, Pa. The following members were present: Drs. R. Knipe, Vedder, E. A. Krusen, Dewees, McKenzie, Wolfe, Wright, Hubley, Dill, Hartman, Hunsberger, Brush, Kriebel, McCracken, McLaughlin, Shearer, Irwin, Bostock, Roberts, Parker, Kershner, Corson, Beideman, P. Lukens, H. Seiple, MacDonald, W. Z. Anders, N. Scholl, Gotwals, Doran, Sherborn, Garner, Simpson, Elmer, Perkins, Hurwitz, Atkinson, G. W. Miller, Little, Fabbri, Arnold and Buyers.

Dr. J. R. V. Wolfe proposed that the society have a public meeting during Cancer Week in November, this was adopted and November 16, 1922, was decided upon.

Drs. Bostock, Hunsberger, Parker, Wright, MacDonald, Lukens, Sherborn, and Buyers spoke upon impression received at the Scranton meeting.

Dr. Henry Jump, of Philadelphia, read an excellent paper upon "Endocrines" and showed a large number of lantern slides during the talk. Dr. Buyers presented a case of exophthalmic goitre.

John C. Simpson, M.D., Reporter.

SOMERSET—SEPTEMBER

At the regular meeting of the Somerset County Medical Society held at Somerset, on the 19th of September, we had the largest turnout in the history of the Society.

At this meeting Dr. Ralph Edmund Conn, of Somerfield, was received into membership. The doctor has appreciated the benefits of uniting himself with his fellow physicians and applied early for membership. This is just what every physician should do, young or old.

At this meeting we also arranged for a Cancer Meeting, to be held on the 14th of November, one week earlier than our regular meeting time. This change was made in order to accommodate a representative of the Cancer Commission, who will be with us at that time to talk on the very important subject of "Cancer."

By the arrangement of Dr. C. P. Large, of Meyersdale, we were favored with the Wertheimer motion pictures on obstetrics. They were so well worth while that they brought out our record attendance.

The cancer talk and demonstrations ought to be quite as interesting, if not more so, because of the widespread suffering and increasing death rate caused by this disease. The inroads cancer has made and is still making on human life should prompt every physician to seize every opportunity to become more enlightened on this insidious disease, and we shall be disappointed if there is not a very full attendance at the coming meeting.

H. C. McKinley, Reporter.

Dr. O. Pine queries: Why not provide rehearsals presided over by editors and official timekeepers for the brethren who chronically outrun the time limit of their papers and endeavor to see how much of their successor's time they can consume?

Dr. O. Pine queries: By what parthogenetic process did the supermedico who chronically vociferates, "But this must not be attempted except by one specially skilled in the technique of roentgenology (or other ology)," acquire his brilliance in that ology?

Dr. O. Pine queries: Can you conceive as fine an example of meek modesty as is constantly displayed by the common "doc" as he listens to public official medicos with high-sounding, bureaucratic titles and specialists of the *ne plus ultra* variety criticizing his unprogressiveness, lack of coöperation, and crass ignorance, whilst he answers not; thus, by way of self-abnegation, outsainting one Martin, of Tours?

How noble the death, how full of beauty,
That the doctor meets in the line of duty!
A theme ennobling the loftiest lyric—
Inspiring the highest panegyric!

—*Dr. O. Pine.*

STATE NEWS ITEMS

DEATHS

Dr. A. Rusling Rainear, of Philadelphia, who was graduated from Jefferson Medical College of Philadelphia in 1882, died on October 8th, aged 63 years.

Rabbi Hyman Lebeau, of Canonsburg, father of Dr. Samuel I. Lebeau, of Pittsburgh, died October 19th, at Montefiore Hospital, Pittsburgh.

Dr. Henry H. Brotherlin, of Hollidaysburg, died on August 20th. He was born in 1859 and was graduated from Jefferson Medical College of Philadelphia in 1883.

Mrs. Lillian C. Pontius, wife of Dr. Paul J. Pontius, of Philadelphia, died suddenly on October 15th, following an operation in the Samaritan Hospital, Philadelphia.

Dr. Levi Zimmerman, of Lebanon, aged 66 years, died on September 6th from arteriosclerosis. He was a graduate of Jefferson Medical College of Philadelphia in 1883.

Dr. James H. Lawhead, of West Newton, aged 60 years, died at the McKeesport Hospital on August 13th. He was a graduate of Jefferson Medical College in the class of 1886.

Dr. Samuel E. Wertman, of Mahanoy City, aged 55 years, died on September 29th from chronic nephritis. Dr. Wertman was graduated from Jefferson Medical College, Philadelphia, in 1889 and was a member of the American Medical Association.

Dr. Harry Milton Smith, of McKeesport, aged 49 years, died on September 8th, from chronic nephritis. He was a graduate of Ohio Medical University, Columbus, Ohio, 1903, was a member of his County and State Medical Societies and Fellow of the American Medical Association.

Dr. Russell P. Heilman, of Emporium, aged 71 years, was killed in an automobile accident, September 10th. Dr. Heilman was graduate from Jefferson Medical College of Philadelphia in 1876, and was a member of his County and State Medical Societies and of the American Medical Association.

The death of Dr. A. G. Bowman, of Lancaster, occurred at his home on September 23d. Dr. Bowman was graduated from the University of Pennsylvania School of Medicine in 1864. He was one of the oldest members of the Lancaster County Medical Society and until quite recently was active in its affairs.

Dr. George R. Andreas, of Wilkes-Barre, died September 19th from cerebral hemorrhage. Dr. Andreas was graduated from Jefferson Medical College of Philadelphia in the class of 1892. He was chief medical examiner for the city schools and at one time was on the staffs of the Nesbitt West Side Hospital and the Mercy Hospital.

Dr. Thomas Vaughan Crandall, of Philadelphia, 82 years old, died at the home of his daughter on September 22d. In 1865 he was graduated from Columbia University College of Physicians and Surgeons, New York. He was a member of the Obstetrical Society of Philadelphia, and the Northwestern Medical Society; and was formerly on the staffs of Garretson, St. Joseph's and Samaritan Hospitals, Philadelphia.

Dr. R. B. Armor, of Pittsburgh, died October 11th. Dr. Armor was born in Harrisburg in 1875 and was a son of the late Major William C. Armor. After taking a preliminary course in the medical department of the University of Pennsylvania he entered Hahnemann Medical College, Philadelphia, from which institution he was graduated in 1898. He spent two years overseas during the World War as major in the Medical Corps, 306th Infantry, 77th Division.

Dr. J. J. Coffman, of Scotland, died suddenly on October 4th in the yard at his home, of a heart attack. Although he retired from active practice six years ago, he retained membership in the Franklin County Medical Society and had been its secretary for many years. At the time of his death he was aged 70 years, 11 months and 10 days.

Dr. Coffman was born in Maryland, passed his early years on the home farm, and, after receiving a public and private school education, attended the Shippensburg Normal School. After graduation he engaged in school teaching, which profession he followed for five years. In 1877 he entered the College of Surgeons and Physicians at Baltimore, taking two courses, and in 1881 he took a finishing course in the medical department at Dartmouth College. He was graduated in the class of 1882. Dr. Coffman was a fellow of the American Medical Association, and for several years he did editorial work for the Charlotte *Medical Journal* of Charlotte, N. C. He is survived by his wife and one son, also three brothers.

BIRTHS

Born to Dr. and Mrs. L. E. Wurster, of Williamsport, August 13th, a son.

Born to Dr. and Mrs. L. M. Hoffman, of Williamsport, September 13th, a daughter.

Born to Dr. and Mrs. Ulrich P. Horger, of Old Forge, October 17th, a daughter, Jean Watkins Horger.

Dr. and Mrs. Harold L. Foss, of Danville, are being congratulated upon the recent birth of a daughter.

Born to Dr. and Mrs. John Hancock Arnett, of Philadelphia, recently, a son, Edward McCollin Arnett.

Dr. and Mrs. John Cooke Hirst, of Philadelphia, are receiving congratulations upon the birth of a son on September 14th.

MARRIAGES

Dr. Arthur M. Dannenberg and Mrs. Marion L. Stein, both of Philadelphia, were united in marriage, August 21st.

Dr. Stephen W. Gryckza and Miss Betty Helen Bellas, both of Hazelton, were united in marriage on September 25th.

The marriage of Dr. James Fell Carrell and Miss Anna Elise Hartman, both of Philadelphia, took place on September 9th.

Miss Margaret Agnes Tullidge, of Philadelphia, became the bride of Dr. Robert Porch Sturr, also of Philadelphia, on September 20th.

The marriage of Mrs. Mary Boas Boll, daughter of Mrs. Ross Boas, and Dr. Constantine Faller, Jr., both of Harrisburg, took place early in October, at the residence of Bishop McDevitt, Harrisburg.

Miss Nancy Evans Dillinger, daughter of Dr. and Mrs. Gregg A. Dillinger, of Pittsburgh, was married to Mr. Albert McDevitt Barr, of New York City, October 20th, in the rectory of St. Paul's Cathedral, Pittsburgh.

The wedding of Miss Frances Hayes Hammond, daughter of Dr. and Mrs. Levi J. Hammond, of Philadelphia, to Robert C. Liggett, also of that city, was solemnized at the home of the bride's parents on October 28th.

Dr. Richard S. Major, of Pittsburgh, and Miss Cornelia Gilbert, daughter of Mr. and Mrs. William Gilbert, of Cincinnati, Ohio, were united in marriage October 21st at the home of the bride in Cincinnati. A tour of the Adirondacks will precede residence in Pittsburgh.

ITEMS

Dr. L. J. Camche and his bride, of Williamsport, recently returned from their wedding trip.

Dr. and Mrs. H. P. Haskins, of Williamsport, have returned from Pike, N. H., where they spent their vacation.

Dr. Ruth Tustin, of Bloomsburg, has returned to her home after spending six months in advanced medical studies in foreign countries.

Dr. Henry Bierman, of Bloomsburg, who spent six weeks or more in Vienna in special professional work, has returned and resumed his practice.

Lightning struck the two-story brick residence of Dr. H. M. Long, of Pittsburgh, on October 23d. No one was injured and resulting damage from fire was slight.

Dr. and Mrs. Guy C. Milnor, of Honolulu, are on their way to this country to spend several months with Dr. Milnor's parents, Dr. and Mrs. M. T. Milnor, of Warrensville.

Dr. J. Alan Corson, son of Dr. and Mrs. J. M. Corson, of Hughesville, has completed his internship at the Wilkes-Barre Hospital and is now located in a suburb of Wilkes-Barre.

Dr. Francis S. Chambers, of Rochester, Minnesota, a former member of Northampton County Medical Society, has become a member of the Olmstead County Medical Society of the State of Minnesota.

The representatives of the 123 welfare agencies in Dauphin County, at a joint meeting in Harrisburg, on October 12th, unanimously adopted a resolution endorsing the proposition for a county tuberculosis hospital.

The Fourth Annual Meeting of the Pennsylvania State Chamber of Commerce will be held at the Penn-Harris Hotel, Harrisburg, Tuesday and Wednesday, November 14 and 15, 1922. An exceptional group of speakers appears on the program and all members are urged to attend.

Dr. Ross Hall Skillern, of the University of Pennsylvania, and Dr. Robert F. Ridpath, of Philadelphia, have been touring the West. They stopped at Minneapolis, where Dr. Skillern read a paper before the American Academy of Otolaryngology, which was meeting in that city.

October 10th was Clinic Day for the Erie County Medical Society. Despite the fact that it rained all day the clinics were all well attended and the day was a decided success. Guests from many of the surrounding county medical societies were also present, having received special invitations to attend.

On October 2d, the new $150,000 hospital was opened in Waynesboro. Miss Anna E. Laughlin, formerly superintendent at Bryn Mawr, is superintendent of the new institution, which is now open for the reception of patients. The capacity of the hospital at the present time is thirty-five beds.

The Mutter Lecture on Surgical Pathology for 1922 was delivered in the Mitchell Hall of the College of Physicians of Philadelphia on November 1st, by James Ewing, M.D., Professor of Pathology, Cornell University Medical College, New York. His subject was "The Principles of the Radiation Treatment of Cancer."

The engagement of Miss Olga L. Wentzel, of Erie, and Dr. Frederick H. Ehmann, of Philadelphia, was recently announced. Miss Wentzel is a graduate nurse of the University Hospital, and is now supervising nurse at the War Veterans' Hospital at Mont Alto. Dr. Ehmann is chief resident physician of St. Agnes Hospital, Philadelphia.

By unanimous vote, the representatives of 123 welfare agencies in Dauphin County at a meeting in Harrisburg on October 12th, voted to form a County Council of Social Agencies to secure the coöperation of all the organizations on philanthropic and charitable matters. The council was formed after Dr. John M. Baldy, Commissioner of Public Welfare, and others had outlined their ideas on the subject. Dauphin County is one of the first in the state in which all the welfare organizations have joined to secure better results from coördinated effort.

After the decision to form the council, officers of the council were elected. Mrs. Francis J. Hall, Harrisburg, was chosen president. The three vice-presidents are: Dr. Calvin S. Few, Middletown; Mrs. W. R. Esbenshade, Hershey; and Mrs. L. K. Diffenderfer, Wiconisco. W. Grant Rauch, of Harrisburg, was chosen treasurer, and Mrs. George H. Orth, also of Harrisburg, secretary.

GENERAL NEWS ITEMS

Dr. Linsly R. Williams, who for the last three years has been director of the Rockefeller Commission for the Prevention of Tuberculosis in France, has returned to this country to become managing director of the National Tuberculosis Association.

Dr. Leon Bernard, Professor of Hygiene in the University of Paris and Secretary of the National Anti-Tuberculosis Association recently organized in France, arrived in the United States on October 10th and has been spending a few weeks observing American public health methods.

The first convention of the Eastern Homeopathic Medical Association was held in Trenton, N. J., October 25th-27th. Some very interesting subjects were discussed. At the Friday's luncheon-meeting Dr. Claude A. Burrett, President of the American Institute of Homeopathy, and Dr. Adolf Lorenz, noted orthopedic surgeon from Vienna, Austria, were the distinguished guests.

The 1922 meeting of the American Medical Editors' Association was held at the Hotel Statler, Cleveland, Ohio, October 16th-17th, the first two days of American Public Health Association Week. Among those who took part in the program were Dr. A. W. Colcord, Clairton, Pa.; Dr. Spencer M. Free, Dubois, Pa.; Dr. C. E. de M. Sajous, of Philadelphia, and Dr. Francis E. Stewart, of Philadelphia.

Members of the American Medical Association who are not now members of the American Association for the Advancement of Science have been invited to become members without the payment of the usual five-dollar entrance fee. This special invitation has been voted by the executive committee of the American Association for the Advancement of Science because of the fact that it is practically impossible for the permanent secretary's office to send an individual invitation offering this privilege to each new member of the American Medical Association each year, as is done in the case of the other scientific societies affiliated with the American Association for the Advancement of Science.

Members of the American Medical Association who are interested in this invitation are requested to write to the permanent secretary, Burton E. Livingston, Smithsonian Institution Building, Washington, D. C. They will thus secure a special invitation and a booklet of information regarding the American Association for the Advancement of Science.

Joseph Leidy, M.D.,

Member of Executive Committee (Medical Section)
A. A. A. S.

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 Incorporated, December 20, 1890

Minutes of the Proceedings of the Medical Society of the State of Pennsylvania

The Seventy-second Annual Session, held at Scranton, October 2, 3, 4 and 5, 1922

MINUTES OF THE HOUSE OF DELEGATES

MONDAY AFTERNOON, OCTOBER 2, 1922—FIRST MEETING OF THE HOUSE OF DELEGATES

The House of Delegates met at the Armory, and was called to order at 3:00 p. m. by the president, Dr. Frank G. Hartman, Lancaster.

The Committee on Credentials made a preliminary report and reported a quorum present.

The president thereupon declared the House of Delegates duly constituted and ready for the transaction of business.

There being no objection, roll call was dispensed with.

The next order was the presentation and the correction and adoption of the minutes of the Seventy-First Annual Session.

Dr. William H. Mayer, Pittsburgh, moved that the reading of the minutes of the Seventy-first Annual Session be dispensed with.

Seconded by Dr. Fred Fisher, Erie, and carried.

Dr. Edward B. Heckel, Pittsburgh, moved that the minutes of the Seventy-first Annual Session be approved as printed in the PENNSYLVANIA MEDICAL JOURNAL, which was seconded by Dr. Henry Pleasants, Jr., Chester, and carried.

The reports of the secretary, treasurer and trustees and councilors, as published in the September issue of the PENNSYLVANIA MEDICAL JOURNAL were referred to the Reference Committee of the House of Delegates on Reports of Officers and Standing Committees.

Dr. Jay B. F. Wyant, Kittanning, made a supplementary report for the Board of Trustees, which was referred to the Reference Committee on Reports of Officers and Standing Committees.

The report is as follows:

The Board of Trustees suggests the following amendments to the report of the Committee on Revision of the Constitution and By-Laws:

1. In Section 5, Chapter IV, of the By-Laws substitute "a medical journal" for "the Pennsylvania Medical Journal" wherever the same occurs.

2. Add to Article IV of the Constitution, Section 8, "Scientists occupying teaching positions in medical institutions of the state, and not possessing a medical degree, may, upon the recommendation of the Committee on Society Comity and Policy, be elected honorary members of this Society by the House of Delegates by a three-fourths vote at any annual session."

The secretary read the report of the Committee on Conservation of Vision, which was referred to the Reference Committee on Reports of Officers and Standing Committees.

The report is as follows:

ANNUAL REPORT OF THE COMMITTEE ON CONSERVATION OF VISION

Your committee begs to report that the action taken by the society at its meeting one year ago in regard to the limitation of the use of wood alcohol commercially, has had the effect of greatly reducing the quantities being used by the manufacturers of hats and of patent leather, through substitution of denatured alcohol for wood alcohol. The improved health of the employees in these two commercial activities and the elimination of the monthly "lay-offs" for sickness have proved to be a great economic saving. The cheapness in the price of denatured alcohol has also eliminated all burning fluids for chafing dishes and bath cabinets, as well as certain bathing fluids that were made from this poisonous product. During the past year the loss of vision by many individuals after drinking concoctions of wood alcohol can be traced mostly to the activities of "bootleggers."

The painters and manufacturers of rubber tires still continue to use large quantities of wood alchol. We would recommend an appropriation of $200.00 to circularize these industries properly and warn them of the dangers that they incur.

We would also recommend that further efforts be made to secure state and national legislation looking to the abolition of wood alcohol or its restrictive control in commerce.

The recommendations in regard to the visual tests for chauffeurs must be pressed for action in the coming legislature in coöperation with the Highway Department. We hope for speedy and effective action.

Respectfully submitted,
S. LEWIS ZIEGLER, *Chairman,*
Committee on Conservation of Vision.

The secretary read a communication from Dr. Howard Lilienthal of the American Society for the Control of Cancer, which was referred to the Reference Committee on Scientific Business.

The communication was as follows:

DR. FRANK G. HARTMAN, September 19, 1922.
Lancaster, Pa.

My dear Dr. Hartman:

Some time prior to the National Cancer Week last fall, I, as chairman of a special committee of the American Society for the Control of Cancer, addressed a letter to the respective presidents of state medical societies calling their attention to the coming campaign and suggesting certain ways in which medical societies—state, district and local—could advance the campaign for the control of this disease.

The response to that letter was whole-hearted and most encouraging and I beg leave to address you this year in a similar way but on a single, specific subject.

Last year's campaign was a very great success considering the rather imperfect ground work that was laid; but we hope this year to make it many times more effective. I think I may say that the success of the campaign of 1921 was in direct proportion to the amount and character of the effort put into it by the medical profession. This is what I meant in my reference to "ground work" for it is appreciated by the American Society for the Control of Cancer that nothing effective can be done without the fullest endorsement and help of the medical profession.

In many states last year the state chairman of the Cancer Committee was farsighted enough to secure the official endorsement of the movement in his district before anything else was done. Then it was easy enough to enlist the aid of the best men. In some instances where this was not done, however, the movement and the motives behind it were not always fully understood and even the intimate friends of the chairman hesitated to become identified with it. This, of course, speaks well for the ethics of our profession but in some cases it spelled failure for the campaign.

This year we wish to enlist your fullest coöperation in adjusting any such unfortunate situation that many exist in your state. Will you undertake to clear the way for this wonderful work of education in your territory by (if it has not already been done):

(1) Personally securing the endorsement of your state society both for the movement and for the state chairman who may be representing the Society in your state. He will, of course, be glad to do anything necessary.

(2) Arranging that an announcement of the endorsement of the movement by the State Society shall appear both in the State Medical Journal and in the lay press; provided, of course, you have a meeting, if this is necessary, before the Cancer Week.

(3) Undertaking to see that similar endorsement, coöperation and publicity is secured in the various district or branch societies and the county societies.

You may, of course, feel that this is of minor importance and that such a purely philanthropic movement is tacitly endorsed without any formality. We thought so, too, a year ago, especially since this Society has from its inception endeavored to keep this one public health campaign in the hands of the organized profession, but we learned our mistake and in some localities too late to rectify it.

May we therefore, earnestly solicit your fullest help to this end?

Most sincerely yours,

Howard Lilienthal,
For the Committee.

The secretary read a communication from the Women's Auxiliary of the American Medical Association urging the organization of a Women's Auxiliary of the Medical Society of the State of Pennsylvania, which was referred to the Committee on Society Comity and Policy.

This communication is as follows:

At a recent meeting of the American Medical Association at St. Louis the following resolution was presented and unanimously endorsed by the House of Delegates:

The Woman's Auxiliary to the State Medical Association of Texas respectfully requests the approval of the American Medical Association of a movement to organize a Woman's Auxiliary to the A. M. A., the object of which auxiliary shall be:

To extend the aims of the medical profession through the wives of doctors to the various women's organizations which look to advancement in health and education. To assist in entertainment at all medical conventions, to promote acquaintanceship among doctors' families, so that close fellowship may exist.

Much enthusiasm and encouragement has been shown by many prominent doctors and their wives.

We are asking your approval and help in this important matter. Any information will be gladly given.

The secretary read the following communication from Dr. Wm. C. Woodward, Executive Secretary of the Bureau of Legal Medicine and Legislation of the American Medical Association, which was referred to the Committee on Society Comity and Policy:

Dr. W. F. Donaldson, *Secretary*, September 28, 1922.
Medical Society of the State of Pennsylvania,
Jenkins Arcade, Pittsburgh, Pa.

Dear Dr. Donaldson:

I hope that the Medical Society of the State of Pennsylvania will consider at its approaching meeting the advisability of taking action with respect to the national prohibition law and with respect to the training of veterans as chiropractors by the Veterans' Bureau, along the lines of the action taken with respect to these matters by the American Medical Association at its recent St. Louis session. Copies of the resolution adopted by the Association appear on pages 1709-10 of *The Journal*, June 3, 1922. The adoption of similar resolutions by the Medical Society of the State of Pennsylvania will be, in my judgment, distinctly helpful to the cause.

If the Medical Society of the State of Pennsylvania adopts such resolutions, copies of them may with advantage be sent not only to the secretary of the treasury, commissioner of internal revenue, and the prohibition commissioner, in so far as they relate to the national prohibition law, and in so far as they relate to the Veterans' Bureau, to the director of that bureau and to the assistant directors in charge of the medical division and the rehabilitation division, but also, in both cases, to every Pennsylvania senator and representative.

I have reason to believe that the success of the chiropractors in getting and keeping a foothold in the Veterans' Bureau will lead similar sects to make strong efforts to do likewise. I suggest, therefore, that any resolution adopted with respect to the vocational training of disabled soldiers be directed not only against training them in chiropractic, but in training them in any similar calling. Insistence should be placed upon the fact that if they are to be trained to treat the sick and injured, they should be required to have preliminary and technical training not less than that required of physicians.

In considering the adoption of resolutions relating to the national prohibition law, it will be well, I think, to study carefully the new rules promulgated by the secretary of the treasury on the recommendation of the commissioner of internal revenue, which, in so far as they relate to the prescribing of liquor by physicians, will appear in *The Journal* for September 30th. If the Medical Society of the State of Pennsylvania finds anything in these new rules that is, in the judgment of the society, unnecessary and oppressive, it might be well to incorporate in any resolution that may be adopted a protest against such burdens.

If the society finds it is practicable to take action along the lines suggested—and I hope that it may do so—will you not kindly furnish me with copies of any resolution that may be adopted?

The secretary presented a report from the Committee to Investigate Community Needs for Hospitals, which was referred to the Reference Committee on Reports of Officers and Standing Committees.

The report is as follows:

September 26th, 1922.

Owing to the usual summer vacation time the report of the Committee on Community Needs for Hospitals has not been put in shape in time to report to you for the October meeting. I regret this because I feel that it is a very important development of the Society. Our committee is so widely distributed that it has been impossible for us to hold meetings. Dr. Wilkinson, of Sellersville, has been laid aside through ill health for more than two years but has always responded from Florida with letters when asked for it.

The committee thought best to attempt some practical demonstration of how to plant a hospital in a community needing a hospital and selected Delaware County in a rapidly growing section as a field for such a development.

The doctors in the locality were called together and organized into a committee of the whole. The lay organizations embraced in the district involved were addressed by the physicians interested in the movement and after some months of an educational program a community meeting was held and one of the most enthusiastic lay members of the district appointed chairman of the work. Before stating the conclusions let me say that the difficulties we encountered were two:

First—A desire on the part of the medical men of the locality to keep the organization in their own hands rather than accept the support of medical men from other districts who might be of great value to the organization.

Second—The convincing of any local body of people that the hospital is as important in their community as the public school or the fire house requires time, and I believe that all we can hope to do in the next five years is to continue the educational program at different points throughout the state before such a program will bear fruit.

The movement in Delaware County was finally postponed, after several meetings, for another year. I am enclosing the report of Dr. Lull, who is secretary of the local physicians, in their endeavor to secure hospital service.

The second part of the committee report has to deal with an attempt to find out the opinion of the component county societies and a résumé of the answers is appended to this report.

Of the sixty-seven counties sixteen replied. Of these sixteen the opinion of the correspondent was that five of the counties were not supplied with hospitals to take care of general surgical work and maternity, and that in nine of the counties there is room for other hospitals.

Part of the literature and the advertisements of the effort on the part of the committee to establish hospitals is enclosed with the report and the opinions expressed that not only does the state need hospitals to care for the sick, but that each community needs hospitals to encourage the settling of the modern, well-equipped doctor in the locality.

We submit this report with the same views as expressed at the last annual meeting that the work is of sufficient magnitude to be taken up by some one who can have time from his practice to make a personal survey and to push the propaganda to different parts of the state and while I am deeply interested in the progress, I should feel that some one should be placed in the chairmanship who can get from point to point and encourage the equipment of hospitals to care for the sick throughout the state.

Very truly yours,

Collin Foulkrod, *Chairman.*

Remarks by President Hartman

Members of the House of Delegates: Your president has no special report to make. I have made during the year such visitations as I was able to do. The bulk of the work was done by the executive secretary as you will notice in his report.

If there is one thing I would like to make a remark on more than any other, it has been my association with the Board of Trustees as an ex-officio member. It was my privilege to be a member of the Board of Trustees for a year and a half or two years, about 1917 and 1918, I do not recall exactly which, but the work done at that time and the functioning of the Board of Trustees at the present time is in such a direct contrast that I cannot help but say a few words of commendation for the work of this body. I say it without any reflection at all upon those who were members of the board at the time, and some of those who are members now, as well as the members of the board at the time I was elected a member of that body. I will say to you delegates, without fear of contradiction, that no organization is managed with more forethought and with better deliberation than the Medical Society of the State of Pennsylvania at the present time. I heartily believe that those of you who have not some intimate relationship with the Board of Trustees have no knowledge of the amount of work or the character of the work presented to that body from time to time for action. The work has been carefully and expeditiously done, and with absolute consideration at all times for the benefit of the individual members of the component societies whoever they may be. This was very apparent in the work done this morning by the Board of Trustees, so that I feel as if I should add a personal word of commendation for this body. It has been a great privilege for me to sit with the Board of Trustees, and it has been an equal privilege for me to tell you of the splendid work they are doing on behalf of every member of the profession in Pennsylvania.

Under the head of new business, Dr. Francis J. Dever, Bethlehem, presented the following resolution at the request of Dr. W. L. Estes, which was referred to the Reference Committee on New Business:

Whereas, It is of great importance for the proper treatment and rehabilitation of the insane and mentally defective persons to have skilled and well organized care and treatment, and

Whereas, The state has undertaken this care and made partial provision for the proper treatment and care of insane and mentally defective persons, but has not yet by statute law made this provision complete and uniform; therefore, be it

Resolved, That the Medical Society of the State of Pennsylvania recommend that the state assume complete charge of all insane and mentally defective indigent persons, and shall by appropriate legislation at the end of the next ten years abolish all other systems of care, notably county care.

Dr. Charles J. Cummings, Williamsport, presented the following resolution in regard to the Sheppard-Towner Maternity Law, which was referred to the Reference Committee on New Business:

The Medical Society of the State of Pennsylvania in regular session assembled at Scranton, October 2-5, 1922, hereby declares itself in full agreement with the American Medical Association in its condemnation of the Sheppard-Towner Maternity Law—"That it is but a measure of mere political expediency; that it is an imported socialistic scheme totally out of harmony with and entirely unsuited to our form of government; that it imposes an unjust and inequitable tax burden in that it compels the people of one state to share the obligations of others."

The Medical Society of the State of Pennsylvania believes that this Commonwealth is fully competent to regulate and properly adjust its own maternity problems. We are opposed to meddlesome federal interference in affairs of this nature which is strictly the concern of the state and of which the state is the proper arbiter.

We respectfully request the Governor of Pennsylvania and the next legislature, when in session, to refuse to accept the provisions of the Sheppard-Towner Maternity Law.

Dr. John A. Campbell, Williamsport, presented the following resolution, which was referred to the Reference Committee on Scientific Business:

Whereas, We, the House of Delegates of the Medical Society of the State of Pennsylvania in assembly met, representing every county in Pennsylvania, and, being familiar with conditions throughout the state, believe that the present standard of premedical requirements is excessive and tends to prevent many desirable young men from taking up the study of medicine, at present this condition working a hardship upon many rural communities, in that it is almost impossible to get a young physician to locate in a rural community; therefore, be it

Resolved, That the House of Delegates recommends to the Pennsylvania State Board of Medical Education and Licensure that they use their influence with the medical colleges of the state to modify the present requirements and make one year of premedical college work the standard instead of two years.

Dr. Henry Pleasants, Jr., Chester, presented the following preambles and resolutions, which were referred to the Committee on Public Health Legislation:

Whereas, It has been brought to the attention of the Medical Society of the State of Pennsylvania that the chairman of the State Board of Workmen's Compensation has made a ruling whereby no physician who is a member of a hospital staff can collect remuneration for services rendered patients who are treated at such an institution under the Workmen's Compensation Act, and

Whereas, We believe that, in view of the fact that industrial concerns are forced to pay large sums of money to insurance companies for the medical and surgical treatment of patients injured, and under treatment according to the provisions of the Workmen's Compensation Act, that physicians in attendance on such cases should be entitled to full remuneration for their services, and

Whereas, The withholding of proper remuneration from physicians who are entitled to same would work great hardships to physicians, and

Whereas, The enforcement of said ruling regarding the treatment of patients in hospitals would tend to encourage physicians to attend many cases in homes when such cases should be more properly treated in hospitals; therefore, be it

Resolved, That the Medical Society of the State of Pennsylvania, through its Committee on Public Health Legislation, unreservedly condemn such ruling by the chairman of the Workmen's Compensation Board as being both unfair and unjust, and furthermore, be it

Resolved, That the Medical Society of the State of Pennsylvania hold itself in readiness to test the constitutionality of such ruling in the courts of the State of Pennsylvania. However, we believe that the remedy is the passage of an amendment to the Workmen's Compensation Act, clarifying Sec. 306, par. E. and such other sections as are in the interest of the medical profession of the state.

Respectfully submitted for the Chester County Medical Society.

Dr. Francis J. Dever, Bethlehem, presented the following resolution at the request of Dr. William L. Estes, which was referred to the Reference Committee on New Business:

Whereas, It is a matter of common knowledge that the constitution and management of the penal institutions of the state are far from what they should be, and

Whereas, It is a matter of great importance both to the state and to the prisoners that measures shall be undertaken to employ confined criminals wholesomely and that their labor shall bring some pecuniary return to the state; therefore, be it

Resolved, That the Medical Society of the State of Pennsylvania heartily recommend to the next legislature the necessity of making a sufficient appropriation to begin a system of work farms for such criminals as may profitably and wholesomely be employed in outdoor labor, and that the matter be referred by the Legislature to the State Department of Public Welfare to work out a proper program and system, and that the Department of Public Welfare be instructed immediately upon the passage of the enabling act to begin the change which ultimately shall lead to the general employment of criminals in farm and garden labor.

Dr. William H. Mayer, Pittsburgh, stated that the Board of Directors of the Allegheny County Medical Society in executive session passed a resolution, suggesting that the delegates from the Allegheny County Medical Society support a movement whereby a per capita assessment should be made on the entire membership of the Medical Society of the State of Pennsylvania to support the Medical Legislative Conference. Accordingly, Dr. Mayer moved that this matter be referred to the Board of Trustees for consideration, to report back to the House of Delegates at this session, if possible.

Seconded and carried.

Under the head of new business Dr. J. Norman Henry, Philadelphia, presented the copy of a brief that was presented to the Commissioner of Internal Revenue by the Committee of the Philadelphia County Medical Society regarding certain flagrant regulations that interfere with physicians in reference to the prescription of narcotics and alcohol.

This matter was referred to the Committee on Society Comity and Policy for action.

Dr. Edward B. Heckel, Pittsburgh, moved that when the House adjourns, it adjourn to meet at 8:00 o'clock this evening, and that the special order of business for consideration be the report of the Committee on Revision of the Constitution and By-Laws.

Seconded by Dr. Fred Fisher, Erie, and carried.

As there was no further business to come before the meeting at this time, Dr. Heckel moved that the House of Delegates adjourn until 8:00 p.m., which motion was seconded and carried.

The House of Delegates thereupon adjourned.

Frank G. Hartman, *President;*
Walter F. Donaldson, *Secretary.*

Monday, October 2—Second Meeting of the House of Delegates

The House of Delegates reconvened at 8:00 p.m., and was called to order by the president.

Dr. Edith MacBride, for the Committee on Credentials, made a supplementary report, stating that 94 delegates had registered, and announced a quorum present.

The minutes of the previous meeting were read and approved.

Before taking up the report of the Committee on Revision of the Constitution and By-Laws, the president called for the report of the Reference Committee on Reports of Officers and Standing Committees.

Dr. J. Paul Roebuck, Uniontown, chairman, made the following report for the committee:

Report of Reference Committee on Reports of Officers and Committees

Your committee recommends that the report of the secretary be accepted as printed in the Official Transactions. The same also applies to the report of the treasurer. The committee recommends that the report of the trustees and councilors be accepted as printed in the Transactions. As to the resolution offered by the trustees at the meeting of this House this afternoon, your committee suggests that it be referred back to the House for discussion.

The committee notes that the individual councilors all made satisfactory reports and showed commendable zeal in the fulfillment of their duties.

We also note that no reports have been made by the District Censors.

We recommend that the reports of the Committee on Public Health Legislation, including the Committee on Defense of Medical Research, and the Committee on Promotion of Efficient Laws on Insanity be accepted as published, and that the report of the Committee on Conservation of Vision be accepted as read from the floor.

We recommend that the report of the Committee on Society Comity and Policy be accepted as published.

We recommend that the report of the Committee on Health and Public Instruction, including the Commission on Cancer, be accepted as published.

We recommend the acceptance of the report of the Committee on Medical Benevolence as published.

Your committee recommends that the report of the Committee on Archives be accepted as published.

The Committee on Physical Education reports progress.

The report of the Committee on the Revision of the Constitution and By-Laws is referred back to the Chair with the suggestion that it be discussed from the floor.

We suggest that the report of the Committee on Hospital Organization be referred back to the Chair, and if the committee is to be continued, that the request of its chairman be granted.

It was moved that the report of the committee be accepted as presented.

Seconded and carried.

Dr. William H. Mayer, Pittsburgh, chairman, presented the report of the Committee on Revision of the Constitution and By-Laws, stating that his committee accepted the suggestions made by the Board of Trustees at the July 6th meeting as published in the September Pennsylvania Medical Journal.

The various chapters and sections of the Constitution and By-Laws were then taken up seriatim, discussed, and finally adopted in the following form:

CONSTITUTION

Article I.—Name

The name and title of this organization is The Medical Society of the State of Pennsylvania.

Article II.—Purposes of this Society

The purposes of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of Pennsylvania; to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment of just medical laws; to promote friendly intercourse among physicians; to protect them against imposition and to enlighten and direct public opinion in regard to the problems of public health and hygiene, so that the profession shall become more useful to the public in the prevention and management of disease and in prolonging and adding to the comfort of life.

Article III.—Component Societies

Component societies shall be those county medical societies, whose several constitutions and by-laws have been approved by this Society.

Article IV.—Membership

Section 1.—The membership of this Society shall consist of citizens of the United States, members in good standing in the component county medical societies, and whose annual assessments in this Society have been paid. This, however, shall not be construed to exclude from active membership any physician who may occupy a teaching position with any college or university within this state.

Physicians, otherwise qualified, who have taken their first citizenship papers, shall be eligible to membership. This membership is conditional upon the completion of citizenship within six years of the granting of first papers. Failure to comply with this provision will automatically terminate membership.

Section 2.—Members whose annual assessments are received by the Secretary of this Society on or before March 31st, shall be entitled to all the privileges of this Society for the current year. One whose assessment is received after March 31st shall not be entitled to any benefit from the Medical Defense Fund from January 1st to the date of the receipt by the Secretary of this Society of his name and assessment. The assessment of new members, elected and reported between July 1st and November 1st, shall be one-half the annual assessment. Assessments received for new members elected and reported in November or December shall be the full annual assessment, which shall cover the assessment for the following calendar year.

Section 3.—Each member in attendance at the annual session of this Society shall enter his name on a registration blank, indicating the component county medical society of which he is a member. When his right to membership has been verified by the official roster of this Society, he shall have a right to all the privileges of membership at that session. No member shall take part in any of the proceedings of the annual session until he has complied with the provisions of this section.

Section 4.—Any person who is under sentence of suspension or expulsion from a component county medical society or whose name has been dropped from its roll of members shall not be entitled to any of the rights or benefits of this Society, nor shall he be permitted to take part in any of its proceedings until he has been relieved of such disability.

Section 5.—Delegates to this Society from any state society entitled to representation in the American Medical Association shall by presenting certificates of delegation duly signed, be entitled to seats and to participate in the scientific business of this Society. They shall not be entitled to vote, nor to hold office, nor be eligible to membership.

Section 6.—Any physician of reputable standing not a resident of Pennsylvania, but a member of his own state or territorial medical association, after an introduction by a member present, may by vote of a general meeting or of a section, be accorded the privilege of participating in the scientific discussions.

Section 7.—Any distinguished physician not a resident of this state but a member of his own state or territorial medical association may be elected an honorary member of this Society by the House of Delegates by a three-fourths vote at any annual session. Not more than two may be thus elected in any one year.

Section 8.—Scientists occupying teaching positions in medical institutions of the state, and not possessing a medical degree, may upon the recommendation of the Committee on Society Comity and Policy, be elected honorary members by the House of Delegates by a three-fourths vote at any annual session.

Article V.—House of Delegates

The House of Delegates shall be the legislative body of this Society, and shall be composed of: (1) Delegates designated by the component county medical societies; each component county medical society shall be entitled to send to the House of Delegates each year one delegate for every 100 of its members or fraction thereof. (2) The presidents of the component county medical societies or, in the absence of the president, the secretary of the component county medical society. (3) The President of this Society, and (4) ex-officio the Trustees, the Secretary and Treasurer, but without the right to vote.

If any component county medical society is without representation at the close of the roll call of the second meeting of any session of the House of Delegates, then the members registered in attendance from that county may select from their number the number of delegates which such county is regularly entitled to elect; if but one member is registered he shall be seated as a representative of that county. When any delegate is once seated, no change may be made during the session. No individual member shall be entitled to more than one vote.

No individual, occupying an ex-officio membership in the House of Delegates, shall be seated as a delegate with vote.

Article VI.—Sections

The House of Delegates may provide for a division of the scientific work of this Society into appropriate sections.

Article VII.—Sessions and Meetings

Section 1.—This Society shall convene in annual session on the first Tuesday of October at such place as may be determined by the House of Delegates, and each session shall continue for three days, or longer, if required by the business of the Society. The House of Delegates may by a three-fourths vote, which may be taken by mail, change the time or place of the next annual session.

Section 2.—Special meetings, either of this Society or of the House of Delegates, shall be called by the President on petition of twenty delegates or one hundred members.

Article VIII.—Officers

Section 1.—The officers of this Society shall be a president, four vice-presidents, a secretary, a treasurer, an assistant secretary, ten trustees, who are also councilors, and as many district censors as there are component county medical societies.

Section 2.—The officers, except the trustees, shall be elected annually by the House of Delegates to serve for one year, or until their successors are elected and installed.

Section 3.—Two trustees shall be elected annually by the House of Delegates to serve for a period of five years. No trustee shall be eligible to succeed himself after he has served two full consecutive terms. Each councilor district shall be entitled to one trustee. A trustee must be a member of one of the component societies of the councilor district which he represents.

Article IX.—Funds

Section 1.—Funds shall be raised by an equal annual assessment on each member of the several component county medical societies. The amount of the assessment is to be fixed by the House of Delegates annually. Funds may also be raised by voluntary contributions and in any other manner approved by the House of Delegates. Funds may be appropriated by the House of Delegates to defray the expenses of this Society for publication and for such other purposes as will further the interests of this Society.

Section 2.—Each year, out of the funds of this Society, the trustees shall appropriate a sum not to exceed $1.00 for each member, to be set aside by the Treasurer as a special fund to be known as the Medical Defense Fund. This fund shall be kept separate from other moneys and may be invested by the Treasurer under the direction of the Board of Trustees and shall be used only for the legitimate expenses of members threatened with or prosecuted for alleged malpractice; provided, however, that no member of this Society shall be entitled to the benefits of this fund who was not in resident practice in the State of Pennsylvania when the alleged act of malpractice was committed.

Section 3.—Each year, out of the funds of this Society, the trustees shall appropriate a sum not to exceed $1.00 for each member, to be set aside by the Treasurer as a special fund to be known as the Medical Benevolence Fund. This fund shall be kept separate from other moneys and may be invested by the Treasurer under the direction of the Board of Trustees, and shall be used only for the relief of pecuniary distress of sick or aged members or the parents, widows, widowers or children of deceased members.

Article X.—Referendum

Section 1.—A general meeting of this Society may, by a two-thirds vote of the members present, order a general referendum on any question pending before or on any action taken by the House of Delegates, and when so ordered the House of Delegates shall submit such questions to the members of this Society, who may vote in person or by mail, within fourteen days. The votes shall be received by the Chairman of the Board of Trustees and be counted by the President and Secretary of this Society and the result reported to the House of Delegates. If the vote is taken by mail, the vote, to be valid, must be participated in by a majority of the members of this Society to determine any question, when it shall be binding upon the House of Delegates.

Section 2.—The House of Delegates may, by a two-thirds vote, submit any question before it to a general referendum, as provided in the preceding section, and the result shall be binding on the House of Delegates.

Article XI.—Seal

Section 1.—This Society shall have a common seal, with power to break, change or renew the same at pleasure.

Section 2.—The seal shall contain the monogram "A. M. A." and "1847," within a circle on a keystone, at the sides of which shall appear: "Organized, 1848; Chartered, 1890," and the whole surrounded by a double circle containing the words, "Medical Society of the State of Pennsylvania."

Article XII.—Amendments

Proposals for amendments or alterations to this Constitution may be offered at any annual session or during the interim. If offered during the interim, such proposals must be sent to the Secretary of this Society at least four months before the next annual session. All proposals for amendments or alterations must appear either in the published minutes of the annual session or must be published in the Journal of this Society at least three months before the next annual session; and all such proposals for amendments or alterations must appear in the official call for the next annual session. If these conditions have been fulfilled, then the House of Delegates may adopt such proposals by a two-thirds vote of the delegates present at the next annual session.

BY-LAWS

Chapter I.—General Meetings

Section 1.—All registered members may attend and participate in the proceedings and discussions of the general meetings and in the scientific work of the sections. The general meetings shall be presided over by the President, or by one of the Vice-Presidents, and at these meetings shall be presented the address of the President, together with such scientific papers and discussions as may be arranged for in the program.

Section 2.—The general meeting or any of the sections may recommend to the House of Delegates the appointment of committees or commissions for scientific investigations of special interest and importance to the profession and the public.

Chapter II.—House of Delegates

Section 1.—The House of Delegates shall meet on the day before that fixed as the first day of the annual session. It may adjourn from time to time as may be necessary to complete its business, provided that its hour shall conflict as little as possible with the general meetings. The order of business shall be arranged as a separate section of the program.

Section 2.—Each delegate, before being seated, shall deposit with the Committee on Credentials a certificate signed by the President and Secretary under seal of the component county medical society, stating that he has been legally and regularly designated as a delegate to this Society.

Section 3.—Twenty delegates shall constitute a quorum.

Section 4.—The House of Delegates shall give diligent attention to and foster the scientific work and spirit of this Society, and shall constantly study and strive to make each annual session a stepping stone to future ones of higher interest.

Section 5.—It shall consider and advise as to the interests of the public, wherein it is dependent upon the profession, and shall use its influence to secure proper medical and public health legislation and to diffuse popular information of an educational nature in relation thereto.

Section 6.—It shall make careful inquiry into the condition of the profession in each county in the state, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such component county medical societies as already exist, and for organizing the profession in counties where societies do not exist. It shall specially and systematically endeavor to promote friendly intercourse among physicians of the same locality, and shall continue these efforts until every legally qualified physician in every county of the state who is reputable has been brought under organized medical society influence.

Section 7.—It shall encourage graduate and research work, as well as home study, and shall endeavor to have the results utilized and intelligently discussed in the component county medical societies.

Section 8.—It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body.

Chapter III.—Censorial and Councilor Districts

Section 1.—The State of Pennsylvania shall be divided into nineteen Censorial Districts, and each district shall have a separate board of censors. The board shall be formed by the House of Delegates of this Society electing one Censor from each component county medical society in the district. Each component county medical society is requested to present to the House of Delegates, for its consideration, the name of a suitable member for District Censor. Each district shall hold a district meeting at least once every two years, for the purpose of increasing acquaintance, good fellowship and organization among the physicians of the district. Only members of a component medical society in that district shall be eligible to membership or office at such meeting, but all physicians residing in the district who are eligible to membership in a component county medical society shall be invited to the meetings. The districts shall be constituted as follows:

First: Philadelphia.
Second: Chester and Delaware.
Third: Bucks, Lehigh, Monroe and Northampton.
Fourth: Berks, Montgomery and Schuylkill.
Fifth: Dauphin, Lancaster and Lebanon.
Sixth: Adams, Cumberland, Franklin, Fulton and York.
Seventh: Huntingdon, Juniata, Mifflin and Perry.
Eighth: Bedford, Fayette, Somerset and Westmoreland.
Ninth: Allegheny, Greene and Washington.
Tenth: Beaver, Lawrence and Mercer.
Eleventh: Crawford, Erie and Warren.
Twelfth: Cameron, Elk, McKean and Potter.
Thirteenth: Butler, Clarion, Forest and Venango.
Fourteenth: Armstrong, Indiana and Jefferson.
Fifteenth: Clinton, Lycoming, Tioga and Union.
Sixteenth: Blair, Cambria, Center and Clearfield.
Seventeenth: Bradford, Sullivan, Susquehanna and Wyoming.
Eighteenth: Columbia, Montour, Northumberland and Snyder.
Nineteenth: Carbon, Lackawanna, Luzerne, Pike and Wayne.

Section 2.—The censors of each district shall consider every case of appeal from the decision of a component county medical society by a member who has been censured, suspended or expelled, provided that the appeal is made within three months after the censure, suspension or expulsion. They shall report in writing their decision thereon to the county medical society, and also to the councilors of this Society. They shall consider and dispose of all questions affecting the principles of medical ethics that may be referred to them either by a component county medical society or by this Society. The decision of the censors in every case must be signed by a majority of the board. In case a district contains an even number of censors, and a tie vote results, the councilor for that district shall cast the deciding vote. Any appeal or judicial question arising in a district composed of less than three county societies shall be referred directly to the judicial council of this Society.

Section 3.—The state shall be divided into ten councilor districts and each district shall be entitled to one councilor. The councilor districts shall be constituted as follows:

First: First Censorial District.
Second: Third and Nineteenth Censorial Districts.
Third: Second and Fourth Censorial District.
Fourth: Fifth and Sixth Censorial Districts.
Fifth: Seventh and Sixteenth Censorial Districts.
Sixth: Eighth and Ninth Censorial Districts.
Seventh: Tenth and Eleventh Censorial Districts.
Eighth: Seventeenth and Eighteenth Censorial Districts.
Ninth: Thirteenth and Fourteenth Censorial Districts.
Tenth: Twelfth and Fifteenth Censorial Districts.

Chapter IV.—Election of Officers

Section 1.—All elections shall be by ballot of the House of Delegates and a majority of votes cast shall be necessary to elect.

Section 2.—The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the morning of the second day of the General Session. This order of business may be postponed to a definite time and place by a two-thirds vote of those present. In the election of officers of this Society, the Secretary shall call the roll of members of the House of Delegates, and each member, as his name is called, shall come forward to the President's desk and deposit his ballot. The President shall then appoint three members as tellers, who shall count the ballots under the supervision of the Secretary.

Section 3.—Any person known to have solicited votes for, or sought after, any office within the gift of this Society shall be ineligible for any office for two years.

Section 4.—The Chairmen and Secretaries of all Sections provided for by action of the House of Delegates shall be elected by the several sections at executive meetings held on the second day of the annual session.

Section 5.—Installation of Officers.—The officers of this Society, except the President, shall assume their duties at the close of the last meeting of the annual session at which they are elected.

Section 6.—Installation of the President.—The President shall be installed at the first general meeting of the annual session following that at which he was elected.

Chapter V.—Duties of Officers

Section 1.—The President shall preside at all meetings of this Society, and at the meetings of the House of Delegates. At the first general meeting of the annual session following his election he shall deliver an address on such matters as he may deem of importance to this Society. He may at any time make suggestions in writing to the House of Delegates or to any special or standing committee. He shall be ex officio a member of the Board of Trustees and Councilors. He shall be ex officio a member of all standing or special committees.

Section 2.—The Vice-Presidents shall assist the President in the performance of his duties; during his absence or at his request one of them shall officiate in his place. In case of the death, resignation or removal of the President, the vacancy shall be filled by the ranking Vice-President.

Section 3.—The Secretary shall attend the general meetings of this Society, the meetings of the House of Delegates and of the Board of Trustees. He shall have no vote in the Board of Trustees, nor in the House of Delegates. He shall keep the minutes of their respective proceedings in separate record books. He shall be custodian of all record books and papers belonging to this Society. He shall receive and receipt for the annual assessments from the component county medical societies. He shall provide for the registration of the members and the delegates at the annual session. He shall aid the Councilors in the organization and improvement of component county medical societies, and in the extension of the influence and usefulness of this Society. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall employ such assistance as may be ordered by the Trustees, and shall make an annual report to the House of Delegates. He shall supply each component county medical society with the necessary receipts and blanks for making its report. Acting with the Committee on Scientific Work, he shall prepare and issue all programs.

Section 4.—The Assistant Secretary shall act as an aid to the Secretary, especially during annual sessions, and may take his place when necessary as a temporary secretary.

Section 5.—The Treasurer shall hold all funds of this Society together with bequests and donations and deposit the same in such banks or trust companies as may be designated as depositories by the Board of Trustees. He shall pay money out of the treasury only on written orders signed by the President and countersigned by the Secretary. He shall render annually to this Society a full account of the state of funds. He shall give bond of a surety company in the sum of $15,000 for the faithful performance of his duties.

Section 6.—At the first meeting of the Board of Trustees after the annual session of this Society, it shall organize by electing a chairman and a clerk, who shall keep a record of the minutes in the absence of the secretary. The chairman shall appoint a finance committee of three and a committee on supervision and publication of a medical journal. The Board of Trustees shall have charge of all properties and the financial affairs of this Society. It shall recommend to the House of Delegates the amount of the annual assessment. It shall be the duty of the Board of Trustees to provide for and superintend the publication of a medical journal and of all proceedings, transactions, and memoirs of this Society. It shall have full discretionary power to omit from the medical journal, in part or in whole, any paper that may be referred to it for publication. It shall appoint an Editor of the journal and such assistants as may be necessary, and shall determine the salaries and the terms and conditions of their appointment.

It shall exercise general supervision over the conduct of all committees in the interval between sessions.

It shall be empowered to appoint an Executive Secretary, who shall perform such executive duties as the Board may designate, and who shall receive such salary and serve for such period and under such conditions as the Board may determine.

It shall be empowered to employ such administrative representative, or representatives for the Society as shall be needed to conduct the work outlined by the Committee on Public Relations, or any other constituted or appointed committee.

These representatives' activities shall be only of an executive nature, since all policies of this Society shall originate within the House of Delegates, the Board of Trustees, or within appointed or constituted committees. The term of employment of such representatives shall not exceed one year; the salary and conditions of their employment shall be determined by the Board of Trustees.

Section 7.—The Board of Trustees shall have full control of all arrangements for the annual session. It may employ a Manager of Sessions and Exhibits, who shall carry out all the business details incident to the annual session of this Society. He shall provide suitable accommodations for the meeting places of this Society, Board of Trustees and the House of Delegates and the respective committees. He shall enlist the coöperation of the local Committee on Arrangements, approve all its actions before this Society, and shall be responsible for expenditures recommended by the local Committee. He shall report an outline of the arrangements to the Secretary for publication in the program and in the medical journal, and make such additional announcements during the session as occasion may require. He shall render to the Board of Trustees a full and itemized account of all receipts and expenditures on account of the annual session, and he shall, from time to time, remit moneys received to the Treasurer. All items of expense in connection with the annual session shall be paid out of the treasury on written orders signed by the President and approved by the Chairman of the Finance Committee of the Board of Trustees, excepting such small items as may be paid from a "Revolving Petty Cash Fund," which may be provided for this purpose. He shall receive a salary to be fixed annually by the Board of Trustees. He shall give a bond of a surety company in the sum of $1,000 for the faithful performance of his duties.

The Board of Trustees may, at their discretion, combine any of these designated positions in a manner which they may deem in the best interests of this Society.

All resolutions or recommendations of the House of Delegates pertaining to the expenditure of money must be approved by the Board of Trustees before the same shall become effective. During the annual session of this Society, the Board shall hold meetings as often as may be deemed necessary and all matters referred to it by the House of Delegates shall be reported on within twenty-four hours if so requested by the House of Delegates. The Board of Trustees shall have the accounts of the Secretary and the officers of the Journal audited annually or oftener if deemed desirable and shall make an annual report on the same to the House of Delegates. This report shall specify the character and cost of all publications of this Society during the year and the amount of all properties belonging to this Society.

In case of vacancy in the office of Secretary or Treasurer, on account of death, or otherwise, the vacancy shall be filled by the Board of Trustees until the next annual session of the House of Delegates.

The Board of Trustees shall designate the salary of the Secretary and Treasurer.

Regular meetings of the Board shall be held immediately after the annual session of this Society and on the first Tuesday in the months of December, February and May of each year. Special meetings of the Board may be called at any time by the Chairman or by six members of the Board. Six members of the Board shall constitute a quorum. During the intervals between the sessions of the House of Delegates, the Board of Trustees shall supervise the action of committees constituted by the action of the House of Delegates.

Section 8.—Board of Councilors.—Each Councilor shall be judicial representative of this Society for a district consisting of certain counties. He shall visit the counties in his district at least once a year, for the purpose of organizing component county medical societies where none exist; for inquiring into the condition of the profession, and for improving and increasing the zeal of component county medical societies and their members. He shall make an annual report of his work and of the condition of the profession of each county in his district at the annual session of the House of Delegates. The necessary traveling expenses incurred by such Councilor, in the line of duties herein imposed, may be allowed on a properly itemized statement; but this shall not be construed to include his expenses when attending the annual session of this Society.

Section 9.—The Board of Councilors shall be the judicial council of this Society. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component county medical societies, or to this Society. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall decide all questions of discipline affecting the conduct of members or component county medical societies, on which an appeal is taken from the decision of the Board of Censors, and its decision in all such matters shall be final.

Section 10.—In sparsely settled sections it shall have authority to organize the physicians of two or more counties into a society. Such societies, when organized and after their constitution and by-laws have been approved by this Society, shall be entitled to all rights and privileges provided for component county medical societies.

Section 11.—The Board of Councilors shall select a member of the bar of Pennsylvania as legal counsel of this Society, and is empowered to pay such counsel an annual retaining fee. To the legal counsel shall be submitted all suits for alleged malpractice brought against members of this Society and he shall be asked to endorse local counsel suggested by the Councilor to defend such suits. To him also shall all proposed appeals to higher courts be submitted. The proper fees for defending members of this Society in suits for alleged malpractice shall be paid out of the Medical Defense Fund, provided that the member has placed his case in the hands of this Society in accordance with the regulations adopted by the Council and approved by this Society, as follows:

a. A member sued or threatened with suit for alleged malpractice should at once fill out the application blank, which can be secured from the Councilor for the District or from the Secretary of this Society. The Society will not undertake the defense of any member unless his application is made within seven days after service of summons.

b. Legal procedure requires that an appearance be made in court within thirty days after service of summons. If deemed expedient by the District Councilor he may, having ascertained from the Secretary of this Society that the member making application was in good standing at the time of the alleged malpractice, retain an approved attorney to make appearance in court in response to service of summons. The Society will not be responsible for attorney's fees incurred in behalf of any applicant, the defense of whom has not been approved by the Councilor for the District.

c. Before other assistance than the service specifically provided for in paragraph "b" may be given, the application must be endorsed by unanimous vote of all the Censors of his county medical society present at a special meeting called for the consideration of the worthiness of the applicant's case, as well as for the consideration of the applicant's standing in his society. It should be understood that the endorsement of the Censors of a county medical society carries with it not only moral support, but their active participation in the conduct of the trial in any way they may best assist, and all without thought of pecuniary return.

d. Immediately after the application has received the endorsement of the Censors of the county medical society, it shall be returned to the Councilor of the District.

e. After the application has received the endorsement of the county medical society censors and the Councilor for the District, the management of the member's defense will rest with the Committee of Council—the Councilor for the District, the President, the Secretary of this Society, and the necessary attorney or attorneys.

f. The Councilor for the District or the Secretary of the State Society, or both, shall then arrange and conduct a conference with the legal representatives and other parties concerned, having in view the thorough discussion of all circumstances pertaining to the threatened suit and the possibility of its withdrawal. The Councilor or Secretary, or both, upon approval by the Trustees shall be paid for their time expended in this particular service and have refunded their legitimate expenses.

g. The applicant shall sign a contract vesting in the Committee of Council sole authority to conduct the defense of his suit, and he shall agree to make no compromise or settlement of the case without the consent of the Councilor of his District given in writing.

h. The State Society will not undertake the defense of any member who, after investigation by the Censors and Councilors for the District, is believed guilty of criminal abortion, feticide, homicide or any criminal act, or who has not conformed to the recognized ethical laws in regard to these cases. It will only defend suit brought in the course of legitimate professional work.

i. The State Society will not pay any expenses for serving subpœnas nor the expense of witnesses residing within the county, nor will it pay judgment for fine awarded or imposed by the jury or court.

Chapter VI.—Committees

Section 1.—The standing committees of this Society shall be as follows, the appointments, when not otherwise provided for, to be made annually by the President:

A Committee on Scientific Work.
A Committee on Public Relations.
A Committee on Public Health Legislation.
A Committee on Society Comity and Policy.
A Committee on Benevolence.
A Committee on Arrangements.
A Press Committee.

Section 2.—The Committee on Scientific Work shall consist of the President, Secretary, Editor, Manager of Sessions and Exhibits, Chairman of the Committee on Arrangements, Chairman and Secretaries of the Sections, Chairman of the Finance Committee of the Board of Trustees, and the Chairman of the Committee on Scientific Work appointed annually by the President. It shall determine the character and scope of the scientific proceedings of this Society for each session, subject to the instructions of the House of Delegates. At least thirty days previous to each annual session it shall prepare a program to be issued by the Secretary, announcing the order in which papers and discussions shall be presented.

Section 3.—The Committee on Public Relations shall consist of nine members appointed by the President, three of whom are appointed annually to serve for three years, and ex officio the President, the President-Elect, the Chairman of the Board of Trustees, the Chairman of the Finance Committee of the Board of Trustees, and the Secretary. It shall organize annually and elect its chairman. It shall conduct and direct campaigns of public education in matters of public health and hygiene. It shall assist the component societies in the conduct of similar campaigns and shall act as a source of information to individuals, or civic or state bodies, who seek enlightenment on matters of public health, medical legislation or scientific medicine. It shall act under the direction of the House of Delegates and in the interim between meetings it is authorized to institute such activities as, in its judgment, will further the purposes of this Society. The President may appoint committees to deal with special problems which may arise, such committees to work in conjunction with the Public Relations Committee.

Dr. Henry D. Jump, Philadelphia, moved that further consideration of the changes in the By-Laws be deferred until the next meeting of the House of Delegates.

Seconded and carried.

On motion, which was duly seconded and carried, the House of Delegates then adjourned to meet at 2 P. M. Tuesday, October 3d.

Frank G. Hartman, President,
Walter F. Donaldson, Secretary.

October 3.—Third Meeting of the House of Delegates

The House of Delegates met at 2 p. m. and was called to order by the President, Dr. Lawrence Litchfield, Pittsburgh, who said:

Members of the House of Delegates: I wish to say a word or two to express my extreme pleasure and gratification in having the honor to preside over this august body, and to tell you what you will soon realize, that I am not a parliamentarian. I belong in one of the clinical sections, and I crave your indulgence.

This is a special meeting called to continue the meeting of last night. The minutes are not ready to be read, and we will not call for them at the present time, but we will go on with the order of business which was interrupted last night and consider Section 4, Chapter VI, and I will call on Dr. Mayer to read this section.

Section 4.—The Committee on Public Health Legislation shall consist of five members and the President, Secretary, and Ex officio the Executive Secretary. This Committee shall represent the Society in securing legislation in the interest of public health and scientific medicine. It shall act under the direction of the House of Delegates, and in the interim between the meetings of the House of Delegates it is authorized to undertake such activities as in its judgment will further the purpose it represents.

Section 5.—The Committee on Society Comity and Policy shall consist of five members. This Committee shall keep informed concerning matters between this Society and the American Medical Association, between this Society and the component county medical societies, and between component county medical societies and their members, and shall recommend to the House of Delegates such action as will best uphold the dignity and honor of the medical profession, exalt its standards, extend its sphere of usefulness and promote the advancement of medical science.

It shall be the duty of the Committee, after careful consideration, to submit to the House of Delegates a list of nominees for delegates and alternates to the House of Delegates of the American Medical Association. These nominations shall not preclude nominations from the floor of the House of Delegates.

Section 6.—The Committee on Benevolence shall consist of the Secretary and three members to be selected annually by the Trustees, at least one of whom shall be a Trustee. This committee shall select its own chairman, secretary and treasurer, and shall have absolute and confidential jurisdiction over the distribution of such part of the Medical Benevolence Fund as may be placed in its hands. No money shall be paid from its treasury except on warrant signed by the chairman and secretary of the Committee, and an annual audit of its accounts shall be made by a committee of the trustees, the names of the beneficiaries being omitted. All beneficiaries shall be designated by number, and after each annual audit all communications tending to show the personality of the same shall be destroyed. This Committee may solicit subscriptions, donations and legacies to be added to the principal of the Medical Benevolence Fund. It may also receive subscriptions to be used for the relief of members in distress from the effects of any special catastrophe.

Section 7.—The Committee on Arrangements shall be appointed by the President on the recommendation of the component county medical society of the county in which the annual session is to be held. The Committee shall effect an organization and coöperate with and work under the advice and supervision of the Manager of Sessions and Exhibits in making arrangements for the annual session.

Section 8.—The Press Committee shall consist of the Secretary, the Manager of Sessions and Exhibits and the Chairman of the Local Committee on Arrangements. This Committee shall have power to add to its number as needed and shall designate the duties of each member so appointed. This Committee shall have general censorship over all matters for the public press in connection with the transactions of the general meetings, the scientific sections and the House of Delegates.

Chapter VII.—Committees of the House of Delegates

Section 1.—The regular committees of the House of Delegates shall be as follows, the appointments to be made annually by the President-Elect early in September from the members already reported as members of the House of Delegates for the coming session of this Society:

A Committee on Credentials.

A Reference Committee on Reports of Officers and Standing Committees.

A Reference Committee on Scientific Business.

A Reference Committee on New Business.

A Committee on Place of Meeting.

Section 2.—The Committee on Credentials of the House of Delegates shall consist of three members of the House of Delegates for the coming session of this Society, to which shall be referred all questions regarding the registration and credentials of the delegates.

Section 3.—The Reference Committee on Reports of Officers and Standing Committees shall consist of three members of the House and to it shall be submitted all reports of officers and committees, not otherwise specifically referred to other committees, for its consideration and recommendation before action may be taken by the House.

Section 4.—The Reference Committee on Scientific Business shall consist of three members of the House and to it shall be referred all new business of a scientific nature, not otherwise specifically referred to other committees before action may be taken by the House.

Section 5.—The Reference Committee on New Business shall consist of three members of the House and to it shall be referred resolutions introducing ordinary new business, not specifically referred to other committees, before action may be taken by the House. This committee is specially charged with all resolutions conveying the thanks of the Society.

Section 6.—The House of Delegates on recommendation of the Committee on Scientific Work may authorize special commissions to undertake scientific investigations during the interim between the meetings of the House of Delegates. Such commissions shall be automatically discharged unless specifically continued by the House of Delegates.

Section 7.—The Committee on Place of Meeting shall receive and consider invitations for the next annual session. It shall report its recommendations for action by the House of Delegates on the morning of the second day of the annual session. The report of this committee shall be the first order of business after the election of officers.

Chapter VIII.—County Societies

Section 1.—All county societies now in affiliation with this Society are component county medical societies. Those which may hereafter be organized in this state which shall have adopted principles of organization, not in conflict with this Constitution or these By-Laws, shall, on approval of the Censors of the district, become component parts of this Society. Only one component medical society from any one county shall be affiliated with this Society.

Section 2.—As rapidly as can be done after the adoption of this Constitution and these By-Laws, a medical society shall be organized in every county in this state, in which no component society exists.

Section 3.—Each component county medical society shall judge of the qualifications of its own members; but, as such societies are the only portals to this Society and to the American Medical Association, due diligence should be observed so that only reputable and legally registered physicians who are citizens of the United States are admitted to membership.

Section 4.—Any physician who may feel aggrieved by the action of a component county medical society in refusing him membership, or in suspending or expelling him, shall have the right to appeal to the Censors of the district for their decision.

Section 5.—In hearing appeals the Censors may admit oral or written evidence, as in their judgment will best and most fairly present the facts; but in every appeal, efforts at conciliation and compromise shall, on the part of the individual Censors and of the Board, precede all such hearings.

Section 6.—When a member in good standing in any component county medical society moves to another county in this state, he shall, on request, be recommended by his society to the component county medical society into whose jurisdiction he moves, for election without the delay attendant upon ordinary applications for membership.

Section 7.—Any physician living near a county line may hold his membership in the county most convenient for him to attend, on permission of the Councilor of his district.

Section 8.—Each component society shall have general direction of the affairs of the profession in its county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county. Systematic efforts shall be made by each member, and by the society as a whole, to increase the membership until it includes every qualified physician in the county.

Section 9.—At some meeting at least sixty days in advance of the annual session of this Society, each component county medical society shall elect a delegate and two alternates to represent it in the House of Delegates of this Society, in the proportion of one delegate and two alternates to each one hundred of its members and for each fraction thereof in good standing on July 1st preceding the session. The Secretary of the component county medical society shall send a list of such delegates to the Secretary of this Society immediately after their election.

Section 10.—The Secretary of each component county medical society shall keep a roster of its members and of the nonaffiliated registered physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of registration or license to practice in the state, and such other information as may be deemed necessary. In keeping such a roster, the secretary shall note any change in the personnel of the profession by death or by removal to or from the county, and in making his annual report he shall endeavor to account for every physician who has lived in the county during the year.

Section 11.—The Secretary of each component county medical society shall during or before January of each year furnish the Secretary of this Society with a list of the officers and members of his county medical society, and shall report new members as soon as they are qualified as members of his society. He shall send the amount of the members' annual assessment at the same time their names are reported and also duplicates of the receipts given to the members of his society. He shall promptly notify the Secretary of this Society of any change in the addresses of the members of his society, and of losses in membership, giving the cause, such as death (with date), resignation, removal (with present address), or expulsion.

Section 12.—Each component county medical society shall notify the Secretary of this Society of any new By-Laws or rules that have been adopted, and furnish for publication in the Journal of the State Society brief notes of its deceased members. Each component county medical society shall designate one of its members to act as reporter for the Journal, who shall furnish such reports of the meetings of his society and such professional news as may be thought desirable for publication.

Chapter IX.—Miscellaneous

Section 1.—No address or paper before this Society, except those of the President and invited guests, shall occupy more than fifteen minutes in its delivery. In the discussion of any papers, no member shall speak longer than five minutes, except by unanimous consent.

Section 2.—All papers read before this Society or any of the sections shall become the property of this Society. Each paper shall be deposited with the Secretary when read.

Section 3.—The deliberations of this Society shall be governed by parliamentary usage, as contained in Robert's Rules of Order, when not in conflict with this Constitution or these By-Laws.

Section 4.—The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relation to each other and to the public.

Section 5.—At each annual session, a public reception shall be provided as part of the program, in honor of the President of the Society. This function shall be under the direction of the Secretary and the Manager of Sessions and Exhibits, and shall be paid for by this Society.

Section 6.—Any vacancy occurring in an appointive office shall be filled at once by appointment by the President for the unexpired term.

Any vacancy occurring in an elective office, except in the case of the President-Elect, during the interim of the Annual Sessions, shall be filled by the Board of Trustees until the next regular session of the House of Delegates. In the case of death or inability to serve of the President-Elect the vacancy shall be filled at once by a special election by the House of Delegates.

Chapter X.—Amendments

These By-Laws may be amended at any annual session by unanimous consent, after lying over one day. If there be a dissenting voice, the amendment shall lie over for one year and take the course of amendments to the Constitution.

Dr. Theodore B. Appel, Lancaster, moved that the report of the Committee on Revision of the Constitution and By-Laws, covering the amendments as amended by the House of Delegates, be approved, and that the amendments be adopted.

Seconded and carried.

Dr. Appel moved that the Committee and the Secretary be authorized to edit these amendments to the Constitution and By-Laws as adopted by the House of Delegates for publication.

Seconded and carried.

Dr. Appel moved the House of Delegates extend to the Committee a vote of thanks for their labors in this revision during the past year.

Seconded and unanimously carried by rising vote.

Dr. Christian B. Longenecker, Philadelphia, asked when the amendments became effective.

The President ruled that they became effective as soon as adopted, and were already in effect.

Dr. Cyrus L. Stevens, Athens, Chairman, reported for the Committee on Society Comity and Policy, as follows:

The Committee on Society Comity and Policy, to which was referred the communication from the Bureau of Legal Medicine and Legislation of the American Medical Association regarding the training of veterans as chiropractors by the Veteran's Bureau and the action with respect to the National Prohibition Law, recomends that these be referred to your standing committee on Public Health Legislation.

The committee further recommends that the communication and brief in regard to narcotics and alcohol, presented by Dr. J. Norman Henry, of Philadelphia, also be referred to the standing committee on Public Health Legislation.

Your committee, to which was referred the communication from Mrs. H. L. D. Kirkham, corresponding secretary of the Woman's Auxiliary of the A. M. A., respectfully recommends that the President designate five women, wives or adult daughters of members of this Society, to consider the advisability of organizing a Woman's Auxiliary of the Medical Society of the State of Pennsylvania.

Dr. Charles J. Cummings, Williamsport, moved that the report be accepted. Seconded.

Dr. Theodore B. Appel, Lancaster, moved to amend that the House of Delegates endorse the brief presented by Dr. Henry, and authorize the Committee on Public Policy and Legislation to take charge of it, transmit it, and to formulate additional complaints in regard to the way in which this office is administered. Seconded by Dr. John D. McLean, Philadelphia.

Dr. Henry D. Jump, Philadelphia, moved further to amend the motion to include the endorsement of the position of the American Medical Association Bureau of Legal Medicine and Legislation.

The amendments were accepted, and the original motion as amended was put to a vote and carried.

Dr. C. R. Phillips, Harrisburg, Chairman, read the following report:

Your Committee on Scientific Business begs to submit the following report with reference to the resolution of Dr. John A. Campbell, in regard to the standard of premedical requirements:

This resolution is not approved because all steps made in the past have been to elevate the standard of medical education, and this seems to us to be a step backward. Further, if made effective, it would place the graduates of Pennsylvania medical colleges at a disadvantage when desiring to practice in states requiring the present standards. Our graduates would not then be on an equality with those of other states. We further feel that the amount of time spent in preparation for the study of medicine is not a determining factor in the selection of a location for practice.

After considering a communication from Dr. Howard Lilienthal, a member of the American Society for the Control of Cancer, we beg to present the following resolution for action by the House of Delegates, embodying the suggestion therein contained, which we approve:

The Medical Society of the State of Pennsylvania endorses the movement of the American Society for the Control of Cancer, and requests the Editor of the Pennsylvania Medical Journal to give the movement whatever publicity the state chairman requests.

The committee further requests all district, branch and county societies to coöperate in the movement.

Dr. Wilmer Krusen, Philadelphia, moved the adoption of the report, with approval.

Seconded and carried.

Dr. J. Norman Henry, Philadelphia, Chairman, presented the report of the Committee on New Business, stating that there were four resolutions submitted to the committee.

1. In regard to the state assuming complete charge of all insane and mentally defective indigent persons.

Inasmuch as this resolution opens up a very wide field, involving large financial and administrative questions, your committee frankly admits that it has not in its knowledge sufficient data on which to base an intelligent opinion, and recommends that the matter be referred to the Committee on Public Health Legislation for careful deliberation and report at the next annual meeting.

2. Resolution regarding a system of work farms for such criminals as may profitably and wholesomely be employed in outdoor labor.

The committee heartily endorses this resolution and further suggests that the terms be made broader in order to include in the proposed employment all convicts for reconstructive occupations, such as road building, etc., this latter being a notoriously extravagant expense to the state.

3. Resolution offered by Dr. Pleasants.

The committee approves of the tenor of this resolution, and therefore recommends that according to its terms, somewhat vaguely expressed, it be referred to the Committee on Public Health Legislation with the endorsement of the House of Delegates.

4. Resolution regarding the Sheppard-Towner bill.

The committee admits that it has not read the Sheppard-Towner bill, but has referred to the editorial in the Journal in which a very good résumé appears, and which also reprints the action taken by the American Medical Association.

With this guide the committee feels justified in recommending the adoption of this resolution.

5. In the interest of uniform procedure the committee recommends that each of these resolutions, if passed by the House of Delegates, should be referred through proper channels to the Governor and Legislature.

Dr. Theodore B. Appel, Lancaster, moved that the report be adopted and the resolutions included in it be referred to the Committee on Public Health Legislation with the endorsement of the House of Delegates.

Seconded and carried.

Dr. C. G. Brumbaugh, Huntingdon, made a supplementary report for the Reference Committee on Reports of Officers and Standing Committees, as follows:

We suggest that the report of the Committee on Hospital Organization be referred back to the chair, and if the committee is to be continued, that the request of its chairman (Dr. Foulkrod) be granted.

It was moved that the report be accepted and the committee continued.

Seconded and carried.

Dr. James M. Quigley, Clearfield, brought up the matter of drinking cups, stating that the Board of Health of Clearfield has found there are a lot of vendors at county fairs using all kinds of common glasses for drinking, which are supposed to be washed and scalded, but frequently are not. The Society ought to take this matter in hand and see that proper legislation is enacted, as in New York state, where paper cups are being used.

He moved that the Committee on Public Health Legislation take this matter up and endeavor to get action at the next legislature. Seconded.

Dr. J. Norman Henry, Philadelphia, moved to amend that the Committee on Public Health Legislation give consideration to the common cup used in communion service.

The amendment was seconded and accepted, and the original motion as amended was voted on and carried.

The Secretary read a communication from Dr. A. C. Morgan, Philadelphia, which was referred to the Committee on New Business.

The communication is as follows:

Whereas, The Pennsylvania Tuberculosis Society has favorably considered a proposal for holding a series of demonstration tuberculosis clinics in coöperation with county medical societies, and

Whereas, one of the surest and most effective means of controlling and preventing tuberculosis is through accurate diagnosis on the part of physicians in general practice; therefore, be it

Resolved, That the Medical Society of the State of Pennsylvania give its approval and backing to this proposal and urge county medical societies throughout the State to coöperate in the plan.

The Secretary presented the following communication from Drs. Kauffman, Myers and Amberson, representing the Franklin County Medical Society, which was referred to the Reference Committee on New Business:

Whereas, In the larger cities, the misguided distribution of charity by the free clinics and dispensaries has been the bane of the medical profession, and

Whereas, This same baneful influence is getting its work in still further through the Public Health and Welfare work of the State, not only in the cities, but also affecting the smaller towns and rural districts, and

Whereas, Speaking specifically, it has been suggested by the Health Department that in the venereal clinics the patients treated in the state clinics are those who cannot afford to pay for medical treatment and for the needful medicines; workers with families dependent on them, earning not more than one hundred dollars a month, or single men or women earning not more than fifty dollars a month, may be classed as coming under these provisions, and

Whereas, We know from our own personal experience that this is a false economic basis upon which to make any such recommendation; and further, according to the United States Bureau of Economic Research the average earnings for employees in industry was $1,078.00 annually for 1918. According to the above recommendations these would all be proper subjects for treatment at any or all the free clinics of the state, and

Whereas, Much of this work by the State Department is conducted by nurses who have not been trained in the ethics of their profession, and in consequence, through this ignorance intrude on the rights and duties of the medical men in the communities in which they work; therefore, be it

Resolved, That we, the members of the Franklin County Medical Society, through our delegates to this meeting of the State Society do most earnestly protest against this growing evil for the following reasons: First, the average income of the physicians of the country has been estimated at less than $800.00 annually, and yet the state asks the physician to give his services and expose himself to infection, to a patient earning $1,200.00 annually, at an absurd salary as low as $15.00 per month; second, in all the subordinate positions in health or welfare work the physician is expected to work for experience, honor or glory, or a minimum of salary, while the lay employees are paid a reasonable salary.

We would suggest that no patient be treated at a free clinic or dispensary, unless recommended by his physician, except in cases of an emergency; that all health and welfare work of the state be done under the direction of a graduate of medicine; that, inasmuch as the departments and others interested boastfully proclaim to the world the value to the state in cold cash of this health and welfare work, the physician should be proportionately recompensed. We would, therefore, pray that the State Medical Society, now assembled, give this subject earnest consideration, and that, while we would be the last to object to any proper distribution of charity, we cannot see any reason why the middle classes should be pauperized.

POSTGRADUATE MEDICAL EDUCATION

The Secretary read a communication regarding the Graduate School of the University of Pennsylvania, which was referred to the Reference Committee on Reports of Officers and Standing Committees.

To the House of Delegates of the Medical Society of the State of Pennsylvania:

As per instructions of the 1921 House of Delegates, a committee from the Board of Trustees made inquiries in a number of different states as to the application of University Extension Methods to postgraduate medical education, and met with Dr. G. H. Meeker, Dean of the Graduate School of Medicine of the University of Pennsylvania, the only Graduate School of Medicine in the State of Pennsylvania, for conference. Dr. Meeker has discussed the question with the directors of his school and submits the following plan with which your committee is in hearty accord:

(a) Groups of physicians, called "extension groups," may be formed at favorable localities under the joint auspices of the local county medical societies and the Graduate School of Medicine of the University of Pennsylvania, admission to said groups to be restricted to Doctors of Medicine approved by the secretaries of the said county societies, whether regular physicians, homeopaths or eclectics.

(b) Each member of each extension group to be regularly registered as an extension student physician in the Graduate School of Medicine and to receive an appropriate certificate on satisfactorily passing an examination to be given after the completion of the course.

(c) The extension courses to be conducted in hospitals, state dispensaries, almshouses, asylums, reformatories, wherever suitable clinical material and facilities may be found, with selected inpatients or outpatients as the central subjects of study; and upon the basis of diagnoses, prognoses and recommendations as to the best medical or surgical treatment. It is particularly emphasized that this work is to be fundamentally clinical and comprehensively coördinated. In this work it is understood that an extension group, in providing patients for any teaching session, will also have ready for the teachers all necessary histories, measurements and laboratory reports, chemical, pathologic, bacteriologic, radiologic, etc., when possible; and the tentative clinical conclusions of one or more members of the extension group. This applies alike to charity cases or to such pay patients as wish to submit to the combined study of the entire group on account of the advantage of getting the opinion of the teacher at a special price.

(d) The University to become responsible for sending to each of the designated extension loci a series of competent teachers in various selected medical branches. Each of said teachers will in general stay but one day in the place of meeting, his morning being devoted to going over the cases in preparation for an afternoon session with the extension group. Probably not more than one conference a week would be the rule, and the total time for a course should extend over a period of two years.

(e) The University to require no tuition fee for the first groups, but a fee may be indicated by future developments.

(f) Each extension group to be made up of a minimum of six or eight physicians to become the guarantor of traveling expenses of each teacher and of his honorarium for each daily teaching session or conference; the minimum honorarium to be twenty-five dollars, and that amount to be exceeded only in the cases of especially large groups. The term "guarantor" is employed, because the extension group should have the privilege of presenting either free or pay patients for study. In the case of pay patients the teacher's consultation fees therefrom resulting would be deducted from the guaranteed expenses of the honorarium, and under favorable conditions might not only free the guarantors from all expense, but also expand the teacher's virtual honorarium.

(g) There is no reason why any hospital staff members of note at the extension loci should not coöperate in this general plan, as extramural members of the faculty of the Graduate School of Medicine, if so nominated and approved by the Dean of the said school. Indeed the ideas of the University with regard to graduate medical education are so broad that coöperation by representative members of the faculties of the University of Pittsburgh, or of Jefferson, etc., is entirely feasible—will in fact be invited and welcomed.

The following clipping from the "Announcement" of the Graduate School of Medicine is pertinent:

> "A very important part of the Pennsylvania plan of graduate medical education is the upbuilding, as rapidly as possible, of an extensive coöperation between the central organization and extramural hospitals, clinics, medical laboratories, libraries, museums, institutes and societies. At present, more than fifty of Philadelphia's medical organizations are found in such a state of coöperation.
>
> "The University authorities are convinced that the plan of extensive and unlimited coöperation between the University's Graduate School of Medicine and other medical institutions, holds potentialities of utmost moment not only for the Graduate School of Medicine but for the extramural institutions themselves.
>
> "Practically unlimited medical educational and investigative potentialities are existent in the many excellent but widely distributed hospitals, and clinical and medical science laboratories, which have, as yet, established no broad educational relationships. These potentialities may well be activated and rendered highly effective by such definite and reciprocal educational connections as are provided by the graduate medical educational plans of the University of Pennsylvania."

(h) It is proposed that the Medical Society of the State of Pennsylvania give its formal approval to this broad subject, and that the State Society communicate with the county societies, informing in the premises, and making due endeavors to stimulate the county societies to prompt and efficient action.

(i) The county societies, or extension groups, are to make their final arrangements directly with the University of Pennsylvania, indicating the type of course desired from a variety which will be submitted by the Dean. It is not feasible to guarantee to the groups their own choice of teachers, but Dean Meeker expects to use, as a rule, for such work only professors of wide reputation and their first assistants.

Your committee feels, as do the Dean of the Graduate School of Medicine of the University of Pennsylvania and his advisors, that there exists in America a real need to have the ideas of University Extension extended to the graduate teaching of clinical medicine. We feel further that such a movement may tend to make rural practice more attractive to young graduates in medicine, who are looking about for a location where they can not only make their living from the start, but at the same time have the opportunity of continuing their studies and keeping in contact with the leaders of medical thought.

Respectfully submitted,
LAWRENCE LITCHFIELD,
THEODORE B. APPEL,
HARRY W. MITCHELL.

On motion which was duly seconded and carried, the House of Delegates adjourned to meet at 9 A. M., Wednesday, October 4.

LAWRENCE LITCHFIELD, President,
WALTER F. DONALDSON, Secretary.

OCTOBER 4.—FOURTH MEETING OF THE HOUSE OF DELEGATES

The House of Delegates met at 9:30 a. m. and was called to order by the President.

The President announced as a committee for editing the new Constitution and By-Laws the Committee on Revision of the Constitution and By-Laws together with the Secretary, and stated that the Society is now working under the new Constitution and By-Laws.

The President appointed as a Committee on Place of Meeting, Drs. Victor S. Messinger, Easton; Charles B. Maits, Pittsburgh; and Charles A. Codman, Philadelphia.

The next order of business being the reading of the minutes of the previous meeting, Dr. Henry D. Jump, Philadelphia, moved that the reading of the minutes be dispensed with.

Seconded and carried.

Dr. Cummings, for the Committee on Credentials, made a supplementary report, stating that 115 delegates had registered and were entitled to be seated in the House of Delegates.

A quorum being present, it was moved that roll call be dispensed with.

Seconded and carried.

The election of officers being in order, the following officers were nominated and declared duly elected:

President-Elect, Howard C. Frontz, Huntingdon; 1st vice-president, Martin T. O'Malley, Scranton; 2nd vice-president, Peter Barkey, Erie; 3d vice-president, John C. Bucher, Lebanon; 4th vice-president, Frank N. Emmert, Chambersburg; secretary, Walter F. Donaldson, Pittsburgh; assistant secretary, Christian B. Longenecker, Philadelphia; treasurer, John B. Lowman, Johnstown; trustees; Irwin J. Moyer, Pittsburgh; Walter S. Brenholtz, Williamsport; and John M. Quigley, Clearfield (to fill unexpired term of Dr. Frontz).

Delegates to the American Medical Association: Walter F. Donaldson, Pittsburgh; George A. Knowles, Philadelphia; John D. McLean, Philadelphia, and Cyrus L. Stevens, Athens.

Alternates-Designate: Frederick L. Van Sickle, Harrisburg; J. H. Murray, Punxsutawney; Frank P. Lytle, Birdsboro, and Lewis H. Taylor, Wilkes-Barre.

Alternates-at-Large: William T. Sharpless, West Chester; J. B. McAlister, Harrisburg; S. J. Waterworth, Clearfield, and Jay B. F. Wyant, Kittanning.

The Committee on Place of Meeting presented Pittsburgh as the next place of meeting. The Committee had not received invitations from any other cities.

Dr. Edward B. Heckel, Pittsburgh, moved that the report be received and approved.

Seconded and carried.

Dr. Frank P. Lytle, Birdsboro, extended an invitation for the Society to meet in Reading in 1924, as by that time they would be able to hold all the section and general meetings in one building.

Dr. Cyrus L. Stevens, Athens, moved that the Secretary be authorized to cast the vote of the House of Delegates for the following nominees of the several county societies for district censors, representing the State Society.

Seconded and carried.

Adams County, T. C. Miller, Abbottstown; Allegheny County, Joseph E. Willetts, Pittsburgh; Armstrong County, T. M. McKee, Kittanning; Beaver County, W. H. Herriott, Freedom; Bedford County, W. F. Enfield, Bedford; Berks County, C. W. Bachman, Reading; Blair County, Joseph D. Findley, Altoona; Bradford County, Arthur L. Parks, Rome; Bucks County, Alfred E. Fretz, Sellersville; Butler County, J. M. Dunkle, Butler; Cambria County, H. F. Tomb, Johnstown; Carbon County, W. P. Long, Weatherly; Center County, J. L. Seibert, Bellefonte; Chester County, Chas. E. Woodward, West Chester; Clarion County, B. P. Walker, West Monterey; Clearfield County, W. W. Andrews, Philipsburg; Clinton County, C. L. Fullmer, Renovo; Columbia County, Luther B. Kline, Catawissa; Crawford County, W. E. Hyskell, Meadville; Cumberland County, H. A. Spangler, Carlisle; Dauphin County, Hiram McGowan, Harrisburg; Delaware County, J. Harvey Fronfield, Media; Elk County, J. C. McAllister, Ridgway; Erie County, O. N. Chaffee, Erie; Fayette County, Jacob S. Hackney, Uniontown; Franklin County, Leslie M. Kaufman, Chambersburg; Greene County, F. S. Ullom, Waynesburg; Huntingdon County, W. H. Sears, Huntingdon; Indiana County, W. A. Simpson, Indiana; Jefferson County, Spencer M. Free, Dubois; Juniata County, R. M. Quig, East Waterford; Lackawanna County, F. J. Bishop, Scranton; Lancaster County, W. J. Leaman, Lancaster; Lawrence County, C. M. Iseman, Ellwood; Lebanon County, W. M. Guilford, Lebanon; Lehigh County, George F. Seiberling, Allentown; Luzerne County, S. M. Wolfe, Wilkes-Barre; Lycoming County, Edward Lyon, Williamsport; McKean County, B. H. Hall, Bradford; Mercer County, A. M. O'Brien, Sharon; Mifflin County, F. A. Rupp, Lewistown; Monroe County, G. S. Travis, Stroudsburg; Montgomery County, William McKenzie, Conshohocken; Montour County, Reid Nebinger, Danville; Northampton County, William P. O. Thomason, Easton; Northumberland

County, Charles M. Thomas, Sunbury; Perry County, H. M. Woods, Blain; Philadelphia County, Edward E. Montgomery, Philadelphia; Potter County, Nathan W. Church, Ulysses; Schuylkill County, J. A. Lessig, Schuylkill Haven; Snyder County, G. E. Hassinger, Middleburg; Somerset County, C. P. Large, Meyersdale; Sullivan County, P. G. Biddle, Dushore; Susquehanna County, William J. Condon, Susquehanna; Tioga County, L. G. Cole, Blossburg; Union County, Chas. H. Dimm, Mifflinburg; Venango County, George B. Jobson, Franklin; Warren County, O. S. Brown, Warren; Washington County, J. W. Hunter, Charleroi; Wayne County, Fred W. Powell, Honesdale; Westmoreland County, B. R. Smith, Jeannette; Wyoming County, W. W. Lazarus, Tunkhannock; York County, W. F. Bacon, York.

Dr. J. Norman Henry, Philadelphia, Chairman, reported for the Reference Committee on New Business, endorsing the work of the Pennsylvania Tuberculosis Society.

Regarding the resolution presented by Drs. Kauffman, Myers and Amberson, the committee recommended that it be referred to the Committee on Public Relations.

Dr. Edward B. Heckel, Pittsburgh, moved that the report be accepted, the recommendation of the committee approved, and that a copy of the same be sent to the Commissioner of Health that he may be informed of the attitude of the Society.

Seconded and carried.

Dr. Harry W. Albertson, Scranton, presented the following resolution:

> Whereas, The American Medical Association has already taken cognizance of the wonderful work wrought by one of its past presidents and seen fit to endorse the movement to establish the Gorgas Memorial Institute of Tropical and Preventive Medicine; be it
>
> *Resolved*, That the Medical Society of the State of Pennsylvania in annual session at Scranton assembled, endorse the movement to establish this worthy memorial in honor of one who has given so much to humanity and the service of his country.

Dr. Edward B. Heckel, Pittsburgh, moved that the resolution be received, endorsed and referred to the Committe on New Business.

The secretary stated that at the last meeting of the Board of Trustees he was instructed to convey to the House of Delegates a proposition with reference to publishing a medical journal in conjunction with the bordering states of Maryland, New Jersey, and Delaware, but as this part of the proceedings of the Board of Trustees had not been typed by the stenographer, he asked that Dr. Shoemaker, a member of the Board of Trustees and Chairman of the Committee on Journal, be extended the privileges of the floor to place the proposition before the House of Delegates.

As there was no objection, Dr. Shoemaker presented the subject as follows:

The matter I wish to present to you is this: About a year ago a suggestion was made to the Board of Trustees that it might be to the advantage of our Society, as well as to the societies of bordering states, if the interests of these societies might be merged in a journal. Correspondence was entered into with the secretaries of the states of Maryland, New Jersey and Delaware through the office of the Secretary of the American Medical Association, who has since died. The proposition was not accepted except by the state of Delaware. A committee was appointed by the Delaware State Society which met with the Publication Committee of our Society. We went over the matter very thoroughly, and the Delaware people have decided they would like to coöperate with our Journal. The scheme was simply this, that if we could merge the interests of the different societies in a journal, calling it a tri-state journal or some other name, without taking away our real identity from the Journal, it would in many ways help the medical profession. We held a meeting at West Chester a short time ago, meeting the committee from the state of Delaware with authority.

We decided that we could very well have Delaware come in at this time. Although small in number, it would act as an entering wedge. The outcome of the discussion has been that our Publication Committee recommended that one of the members of the committee go before the Delaware State Society on the 10th of October (this month) and explain the matter fully to them, and in that way have the matter brought to a focus.

The other suggestion was that the name of the Journal be changed. You will remember that in passing certain resolutions regarding changes in the Constitution and By-Laws the name of the Pennsylvania Medical Journal was omitted and "a journal" substituted. In this way we will be given a little leeway.

We would ask the authority of the House of Delegates to have a commissioner named who may appear before the State Society of Delaware and explain the matter fully to them. That is the object of the resolution as passed by the Board of Trustees on Monday.

Dr. Cyrus L. Stevens, Athens, moved that the House of Delegates authorize the Board of Trustees to take any action they think suitable regarding the future name and conduct of the present Pennsylvania Medical Journal.

Seconded by Dr. Henry D. Jump, Philadelphia, and carried.

Dr. J. DeWitt Kerr, Lebanon, presented the following resolution:

> Whereas, The publishing of a journal is of vital importance to a medical society in the dissemination of business and scientific information, and
>
> Whereas, The office of Executive Secretary has been proved an important one, requiring great diplomacy, exceptional alertness, and mature judgment in the administration of its duties; be it
>
> *Resolved*, By the Medical Society of the State of Pennsylvania, through the House of Delegates in regular session assembled, that we note with increasing pride the progressive improvement from year to year, in essential details of the Journal of the Medical Society of the State of Pennsylvania; and be it further
>
> *Resolved*, That we recognize the efficient manner in which the office of Executive Secretary has been administered; that we appreciate the ready accessibility of information of value to the public and the profession, and the untiring efforts of this office in carrying out the fundamental aims of this Society.

Dr. C. R. Phillips, Harrisburg, moved that the resolution be adopted.

Seconded and carried.

Dr. Harry W. Albertson, Chairman of the Finance Committee of the Board of Trustees, Scranton, made the following recommendation to the House:

The Board of Trustees recommends that the per capita assessment for the year 1923 be the same as that of 1922, viz, $5.00; that the distribution of this be 75 cents for the Medical Defense Fund, 15 cents for the Medical Benevolence Fund, and the remainder to be used for the publication of the Journal and for such other matters as the Board of Trustees may deem wise.

Dr. Edward B. Heckel, Pittsburgh, moved that the report be received and approved.

Seconded and carried.

Dr. Charles J. Cummings, Williamsport, offered the following resolution of thanks:

> *Resolved*, That the House of Delegates extend a vote of thanks to the Committee of the Lackawanna County Medical Society for their magnificent and efficient entertainment of the delegates and the visiting doctors of the component societies of the State of Pennsylvania and their ladies.

Seconded and carried unanimously by rising vote.

Drs. Brumbaugh and Phillips were appointed as a committee to find the president-elect and escort him to the House of Delegates.

President Litchfield in presenting Dr. Frontz said: It gives me great pleasure to present to you your President-Elect who needs no introduction.

Dr. Frontz, in accepting the presidency, said:

Mr. President and members of the House of Delegates: I want to express my appreciation of this distinguished honor which is more than I deserve. The honor of being elected President of the Medical Society of the State of Pennsylvania is one that I have always considered a high one, and one I never thought that a country practitioner such as I am would ever receive. I have a feeling, however, that an honor without responsibility and service is of little value, and when I note the interests of this great State Society as I have observed them for a number of years as a member of the Board of Trustees, it occurs to me that we are an organization of high standards, and that it is necessary for those in authority to work hard to maintain those high standards which are valueless unless they are maintained. Therefore, I not only appreciate the high honor that you have conferred upon me, but also realize that I am accepting a great responsibility, and I promise you to perform the duties of the office to the very best of my ability.

The first vice-president, Dr. Martin T. O'Malley, Scranton, was introduced and thanked the House of Delegates for the great honor conferred upon him.

As there was no further business to come before the meeting, on motion of Dr. Fred Fisher, Erie, which was duly seconded and carried, the House of Delegates adjourned sine die.

Lawrence Litchfield, *President;*
Walter F. Donaldson, *Secretary.*

MEMBERS OF THE HOUSE OF DELEGATES ANSWERING ROLL CALL

Adams County Society—Edgar A. Miller.

Allegheny County Society—William H. Mayer, Secretary; Carey J. Vaux, John M. Thorne, Harold A. Miller, Edward E. Mayer, George W. McNeil, Charles B. Maits, Edward B. Heckel, John W. Worrell, J. Donald Iams, Richard J. Behan, R. R. Snowden.

Armstrong County Society—Jay B. F. Wyant, Secretary.

Beaver County Society—Jefferson H. Wilson.

Berks County Society—Winfield H. Ammarell, President; Frank P. Lytle, Abner H. Bauscher.

Blair County Society—W. Albert Nason.

Bradford County Society—Howard C. Down, President; Cyrus Lee Stevens.

Bucks County Society—Roscoe A. Magill.

Cambria County Society—William E. Grove.

Carbon County Society—J. J. Bellas, President; Alexander Armstrong.

Center County Society—James L. Seibert.

Chester County Society—William W. Betts, President; Henry Pleasants, Jr.

Clarion County Society—Charles A. Fitzgerald.

Clearfield County Society—James M. Quigley, Secretary; Ward O. Wilson.

Clinton County Society—Marsden D. Campbell, President; David W. Thomas.

Columbia County Society—Frank R. Clark, President; William C. Hensyl.

Crawford County Society—Walter W. Shaffer, President.

Cumberland County Society—Harry A. Spangler.

Dauphin County Society—Herbert F. Gross, President; Earl R. Whipple, Clarence R. Phillips.

Delaware County Society—John Byers Roxby, President; C. Irwin Stiteler.

Elk County Society—Samuel G. Logan.

Erie County Society—Fred Fisher, Fred E. Ross.

Franklin County Society—Frank N. Emmert.

Huntingdon County Society—Fred R. Hutchison, President; Cloyd G. Brumbaugh.

Jefferson County Society—Irvin R. Mohney, President; John H. Murray.

Lackawanna County Society—James D. Lewis, President; Arthur E. Davis, Daniel A. Webb.

Lancaster County Society—Joseph P. Kennedy, President; J. Paul Roebuck, Harry B. Roop.

Lawrence County Society—Loyal W. Wilson.

Lebanon County Society—J. DeWitt Kerr.

Lehigh County Society—Frederick R. Bausch, David H. Parmet.

Luzerne County Society—Walter Davis, President; Elmer L. Myers, Lewis Edwards, Herbert B. Gibby.

Lycoming County Society—John A. Campbell, President; W. E. Delaney, Charles J. Cummings.

Mercer County Society—M. Edith MacBride, Secretary.

Mifflin County Society—James A. C. Clarkson, Secretary; Charles C. Stambaugh.

Montgomery County Society—Edgar S. Buyers, Secretary; J. Newton Hunsberger, Herbert A. Bostock.

Montour County Society—Horace V. Pike, President; J. Allen Jackson.

Northampton County Society—Victor S. Messinger, Secretary; Paul R. Correll, Francis J. Dever.

Northumberland County Society—E. Roger Samuel, President; Horatio W. Gass.

Philadelphia County Society—J. Norman Henry, C. B. Longenecker, W. S. Reese, W. Krusen, Henry D. Jump, R. S. Dorsett, J. D. McLean, J. W. Crosky, I. W. Hollingshead, William S. Higbee, Joseph C. Doane, Thomas R. Currie, Arthur C. Morgan, Edward A. Shumway, George Wilson, George A. Knowles, Paul B. Cassidy, T. Turner Thomas.

Schuylkill County Society—John J. Dailey, President; George O. O. Santee, Harry H. Stewart.

Snyder County Society—Edward W. Toole.

Sullivan County Society—Martin E. Herrman, President.

Susquehanna County Society—Fred S. Birchard.

Venango County Society—F. Earle Magee.

Washington County Society—Edgar M. Hazlett, William D. Martin, James H. Corwin.

Wayne County Society—Arthur J. Simons.

Westmoreland County Society—Bert Haughwout, William H. Taylor.

Wyoming County Society—Van C. Decker, President; William W. Lazarus.

York County Society—George E. Holtzapple, Lawton M. Hartman.

MINUTES OF THE GENERAL MEETING, TUESDAY, OCTOBER 3, 1922

The Seventy-Second Annual Session of the Medical Society of the State of Pennsylvania was called to order in general meeting at 10 a. m., Tuesday, October 3, 1922, in Rooms F and G, Thirteenth Regiment Armory, Scranton, by the President, Dr. Frank G. Hartman, of Lancaster.

Invocation

By the Rev. William L. Sawtelle, D.D., Pastor of the First Presbyterian Church, Scranton:

O, Thou Almighty God, Thou who art the Author of Life, Thou who dost reveal unto us Thy truth, we bless Thee and we praise Thee. We thank Thee for this company of men who love the truth. Upon them may Thy blessing rest as they shall devote themselves to the pursuit of truth. We bless Thee and thank Thee, Eternal One, that Thou art not pleased to reside in an obscure and far-off place, but that Thou dost welcome us into Thy counsel and that Thou dost call upon us to know the truth, and it has been proclaimed that "The truth shall make us free."

We thank Thee for men capable of understanding great things. We thank Thee for hearts that are moved by highest motives. We bless Thee for every great impulse that comes to us to do a bit of work in this, Thy world. We thank Thee for every relief from pain, for every enlargement of service that has been made possible by the zeal of those who seek to do well to their fellow men.

Now, in all that is done and said in this convention, may it be that we shall not fail to see that God speaks His unchanging and unchangeable truth, as declared. May we seek to be comrades of His, fellow laborers with Him. Grant that wisdom shall mark this session and may all of us who labor in Thy great kingdom have those holy rewards of joy because we are part of the great world's work, because we are seeking to do something that will minister to the needs of men.

May the abandon with which we serve be that which shall bless Thee and our fellow men in doing that, and unto Thee, Father, Son and Holy Spirit be all praise, world without end. Amen.

Address of Welcome

Hon. John F. Durkan, Mayor, Scranton: Mr. Chairman, and I was going to say, men of the Convention, but I see we have ladies also, so I will say Ladies and Gentlemen of the Convention: I think it was one of the prophets in the old days who was addressing a number of men assembled as you are to-day, and in opening his remarks he said to them, "It is good to be here." And I want to use that phrase in talking to you men of the medical profession this morning and say it is good to be here. When men and women meet or convene for the purpose of expounding worthy principles, with the intention of developing or furthering a worthy cause, their action not alone courts our commendation but it deserves our sanction by our presence. Hence I say, "It is good to be here."

It is good to be among you women and men of the medical profession who are assembled in this hall for the purpose of solving life's greatest problem. You know after all the one great all-absorbing question among men for all time is that of man's existence, of man's proper existence or how to secure the best out of life. This is a question that bothered men's minds away back in the early days. The kindly Confucius, the liberal Buddha, the austere Mohammed, all these men dealt with this great question, the question of how to live life at its best and how to get out of life the best there is in it for ourselves, our families and those we love. In our day, this so-called Christian era, we have our codes of morals and our modes of living with the idea of getting out of life the best there is in it for mankind, and after all, that is the mission of this convention. You men are gathered here to solve the question as to how we should live life at its best, and I want to welcome you men and women to this city of ours.

Chairman O'Malley said to me, "What is there about the average medical man that appeals to you?" We were talking about medicine and other things as I came into the hall and I said to him, "The medical profession has been extremely fine to me." He has asked me to tell you why. I might say to you that outside of being Mayor of the City, I am engaged in the undertaking business. (Laughter.)

This is the impressive feature here to-day after all, that when I came into this hall I heard Dr. Sawtelle opening the meeting and speaking of God—mentioning God so many times. Don't you know, we have always associated with the medical profession, to a great extent, the spirit of agnosticism. We generally found that after a fellow went to medical school three or four years and came back he had read Herbert Spencer, Huxley and Tyndall, and was not able to believe with the other fellows he associated with before he went to school.

What is the trouble with the world to-day? What is the trouble with New York and Boston and Scranton and Wilkes-Barre and every other place? Do you know what is our trouble in the world to-day? It is this: We do not take God into the plans. We look upon God as a Redeemer only and only go to Him when we get into a mess. We do not go to Him before we get into the mess. Oh, yes, men, in the everyday life, in your life as physicians, you must take God into the plan.

An American architect visited the wonderful Cathedral in Rheims. The architect was going up to a place above the belfry and saw an old man there working on the keystone of the Cathedral. The old man was working, hewing, developing, measuring and smoothing up this keystone. The American architect said to the old fellow: "My dear man, you are spending an awful lot of time on that keystone." "Oh, yes," said the old fellow, "it must be right. I am going to make it right." The architect said, "It is three or four hundred feet above the street level. Nobody will ever see that keystone." "Oh, yes," said the man, "God will see it."

Yes, men, we must take God into the plan. We must reckon with Him; we must perform our duties as citizens with God in the plan and conscience in the work. I do find there is a change in the average physician, and the old spirit of Spencer, Huxley and Tyndall is being superseded by the spirit of belief in God. And I want to tell you, men, it is a mighty sustaining thing.

I want to say to you to-day as Mayor of the City of Scranton, we are delighted to have you with us. We have a wonderful city here and we like it. What more need be said? We have a splendid citizenship. We made a wonderful fight in this town. I believe there was no city in all the world that made the fight for its very existence that Scranton did, and I include the cities across the water during the great war. For more than a decade this splendid citizenship of ours made a fight against a ruthless system of coal mining that practically had this city doomed, and we went so far in the fight that we succeeded in practically having the Supreme Court of the State of Pennsylvania reverse itself, with the result that to-day Scranton is a safe city. The coal mining industry can go along and mine its coal but they must mine it with care. So you are coming into this city to-day on the threshold of an awakening, as we might call it. Faith in this city has been reëstablished. We are proud of the part that our people played in this great fight. We feel that we have as fine a citizenship as you will find in all the world. And I am going to enfranchise you for the week. I am going to make each and every one of you a citizen of Scranton. What more can the Mayor do for you? (Applause.)

Address of Welcome

Dr. James D. Lewis, President of the Lackawanna County Medical Society:

Mr. President and Members of the Medical Society of the State of Pennsylvania—dear friends: I am, on behalf of the Lackawanna County Medical Society, welcoming you to Scranton. We have tried to do our little part in making your stay in Scranton one that will be worth while. The Mayor has already mentioned the fact that we are proud of Scranton. I want to tell you that as doctors we are proud of Scranton. I feel that we have in Lackawanna County one of the best medical societies—that means much—one of the best in Pennsylvania, and saying that means that we have one of the best medical societies in the United States of America.

We have printed some things on the program for your entertainment. Now, if there is anything you want and don't see, please ask for it and we will try to supply you. We mean this. We hope you folks will take it in the spirit in which it is given. (Laughter.)

Going back once more to what we think of our County Medical Society—pardon me if I seem a little vain; I am. I am like most men, if there is something to boast of, I like to boast of it. During the last two years the Lackawanna County Society has had more than 16% of its members go away and take postgraduate work. That means progress. And I think we are the only society that has its meeting once every week for ten months of the year. Our programs are, we think, worth while. One of our members at this particular convention is going to try to impress you with the importance of postgraduate work as it really should exist.

If I say that—I had a long speech prepared—I mean it, but Mayor Durkan took all the wind out of my sails, so I will close, welcoming you to Scranton on behalf of the County Society Committee. We hope you will all have a good time.

President Hartman: Next is the presentation of the program by Dr. Thomas G. Simonton, a most valuable member in the administration of the affairs of this Society.

Presentation of Program

Dr. Thomas G. Simonton, Pittsburgh, Chairman of the Committee on Scientific Work:

Ladies and Gentlemen: In presenting the program there is very little to be said, as the program is printed in pamphlet form and you all have a copy. The Committee would like to say this: They have labored hard to try to present a program that will appeal to all the members, to the specialists as well as general surgeons and medical men. It has been hard to choose from the number of subjects that have been presented, and there may have been disappointments among some whose proffered papers have been, from necessity, returned.

The Committee have from the first tried to outline a tentative program of subjects that they deemed would be of sufficient interest to the members of the Society, and then from papers that were submitted tried to mould a program that would be attractive. We have tried and striven to make it practical so that the members coming here can, in a way, look on the three days spent at the annual meeting of the Medical Society of the State of Pennsylvania as postgraduate work. We have quite a number of invited guests who are going to read papers before the different sections, and out of respect to our guests and to members of the Society who are taking their time to come here and read papers, we hope that their efforts will be received by a large attendance.

Announcement of Entertainments

Dr. Martin T. O'Malley, Chairman of the Local Committee on Arrangements:

Mr. Chairman, Ladies and Gentlemen: My remarks will be very brief. The sociability that Mayor Durkan said we hankered for and the good time that Dr. Lewis promised to give you is yours while you are in Scranton. If you do not have it, it will be your own fault. Whatever our plans and labor have been, all that is needed to reward them is your thorough enjoyment and your thorough entrance into the social program. The Entertainment Committee wants you to feel that you are in your own home, and to do as you would in your own home. If you do not have an agreeable time while you are here, we are going to blame you and not our committees.

At one o'clock this afternoon the visiting women go to Nicholson Viaduct, over the Lackawanna Trail. This evening the ladies will spend at the Strand Theatre. This evening occurs the smoker for the men. To-morrow afternoon the ladies will go to Pocono Mountain, and on Thursday afternoon to the Country Club. To-morrow evening, of course, none of us will miss, I am sure, the big social event of the State Meeting, the reception to our President, Dr. Litchfield.

Thursday night Dr. Laplace, of Philadelphia, will deliver a lecture on "Pasteur." We have aroused a great deal of public interest in this lecture. We hope as many of you as possible will remain over.

President Hartman: This meeting is particularly honored with the presence of Pennsylvania's own, Dr. George E. de Schweinitz, President of the American Medical Association.

Address

Dr. George E. de Schweinitz, Philadelphia, President of the American Medical Association:

Mr. President, Ladies and Gentlemen of the Society: It is a very great pleasure and a very great honor to be able to be here this morning and speak to the audience now before me. Because I have in the last almost two years been frequently present at the meetings of the Board of Trustees and of the Executive Committee of the Board of Trustees in Chicago in connection with the American Medical Association, although not a member of the body, I think, perhaps, I have the official permission of that body to convey to this Society salutations and greetings.

We are apt, ladies and gentlemen, to speak of the American Medical Association. In point of fact, with its component county societies, with its constituent state associations, to the greatest of which I am now speaking, it is not the American Medical Association. It is our association and that, after all, must be the word which joins us together in making it truly our American Medical Association. It is so constituted that it has become the representation of a great body of medical men, well nigh 100,000.

I may not speak of the policies of the Board of Trustees; they will be discussed, if at all, by Dr. West. I am only sorry that Dr. Billings, the Resident Trustee, is unable to be present on account of illness. But this I may say to you: you will remember that when well nigh seventy-six years ago the American Medical Association was founded, it was founded for the purpose of taking care of the interests and requirements of the medical profession; it was founded for the purpose of educating the public as to the requirements, the interests and, make no mistake, the rights of the medical profession; and it was founded for the purpose of meeting and endeavoring to solve the mighty problems which always surround this great profession to which you and I and all of us have the honor to belong.

Now, I ask you, ladies and gentlemen of the State Society of Pennsylvania, I ask you to try and believe that those things for which the American Medical Association was founded have not been shunted to the side. Better and better each year the obligations which were then registered have been fulfilled, and they can be fulfilled only if from all sides—and I hope most of all from this great state—the support of the constituent associations is given to the central offices where they do honestly and earnestly and constantly labor to interpret the obligations which were made and accepted so many years ago.

I pause here for a moment because I think it is but right to say that I am sure you feel, as a constituent portion of the American Medical Association, what a great loss it has sustained in the death of Alexander Craig, who was, as many of you know, an unusual man, filling with honesty of purpose and with true regard for the sacredness of his work a very difficult position and filling it well. He was honest in his work, faithful as the sun that rises. He was truly a man who did things according to the conduct of the higher life, and the man who follows him must be a man without fear or favor in the track that Alex. Craig made.

Mr. President and gentlemen, much is to follow. I must be brief. I have no doubt that all of you remember how Ruskin described the two pillars that form the palace of San Marco, and how having described them with the beauty of language of which he only was master, said: "There they stand in perfect sympathy and uncontending effort." Now, ladies and gentlemen of this Society, you and your associates and the workers at the central offices of the American Medical Association are like those pillars standing as monuments of what each in his station shall do. And I hope they are standing as monuments indicating that we shall work for the common good, and work "in perfect sympathy and uncontending effort." (Applause.)

President Hartman: Under the head of "Introduction of Delegates from Other Societies," it has been the privilege of the President of this Society each year at this time to present Dr. Alexander R. Craig to this State Society of which he was a member. It was my thought and my intention to announce his death upon this occasion. Dr. de Schweinitz has so fittingly referred to it that there is no occasion for me to make further announcement, except I might say, to state the personal relation that I had with Dr. Craig.

We graduated together on the 10th of May, 1893, from the University of Pennsylvania. Approximately a year later, after serving a year's probation in Philadelphia, we marched into the Courthouse in Lancaster, stood together and registered our diplomas with the Prothonotary, which was necessary at that time. We became members of the Lancaster City and County Medical Society at the same time, he practicing at Columbia and I at Lancaster, about ten miles apart. Desire for advancement attracted him to Philadelphia, when he transferred his membership to the Philadelphia County Society, where he continued his membership in the State Society until the time of his death.

As I stated before, Dr. de Schweinitz has fittingly referred to his passing away. I only feel impelled to make these few remarks by reason of my personal acquaintance, friendship and knowledge of the man.

At this time I want to announce the passing away of another figure standing out prominently as he did in his day—a member and past president of this Society, Dr. William S. Foster, of Pittsburgh. Many of you will recall him and many of you had an intimate knowledge of the man. And those who have known him will revere his memory as a prominent figure in this organization. He was always deeply interested in what was going on and always had the advancement of the profession at heart.

Presentation of Gavel to Retiring President Hartman by Dr. Theodore B. Appel, Lancaster

Dr. Appel: Mr. President, Ladies and Gentlemen: The presidency of this Society has in years past been bestowed annually upon men who have shown by their professional attainment, by their ability in organization and by the work that they have done in the profession, their suitability to become leaders, for a time, of the profession in this state; and to one who looks over the record of those men who have held that position in the last seventy-two years there is evidence that very few mistakes have been made. Some years ago there originated the very pretty custom of bestowing on the retiring president a gavel as a token of the appreciation in which he had been held by his fellows. This year that duty has been conferred on me.

Dr. Hartman, for the twenty-nine years since your graduation from the University of Pennsylvania you have devoted yourself with unusual whole-heartedness to the duties of your profession. You have not been led aside into by-paths by the lure of financial gain, but have given with unusual unselfishness the best that is in you to your patients. And the loyalty of those patients and the esteem in which you are held by your professional brethren in your community are the best proofs of your professional success.

In addition you have possessed powers of organization, keen insight into individuals beyond the ordinary man; you have stood as a public-spirited citizen in your community, and you have given to this Society in years past, in the House of Delegates and in service on important committees, the advantages of these qualities. You are now about to finish your successful year as President of this Society, and in view of our lifelong close association and friendship, I took it as a great favor when the President of the Board of Trustees gave to me the privilege of presenting you with this gavel.

President Hartman: Dr. Appel, Members of the Board of Trustees, Members of the Medical Society of the State of Pennsylvania:

I am afraid to say that I am surprised. I was present when the bill for the gavel was approved yesterday morning.

I want to thank you and assure you that it will be my wish in using this gavel that it may be for the advancement of the profession, and I trust that when so used it will be with honor to the donors and credit to myself. To you, Dr. Appel, I want to express my gratification for the very complimentary manner in which you have presented it.

Secretary Walter F. Donaldson read the following telegram:

Harrisburg, Pa.

Dr. Frank G. Hartman,
Hotel Casey, Scranton, Pa.

Regret I can't be with you. Slight indisposition kept me from my work to which I have just returned. Assure Society of my deepest appreciation of the whole-hearted support given the department under my administration.

Edward Martin.

Dr. Charles A. E. Codman, Philadelphia: I should like at this time to present a resolution and move its adoption:

Resolved, That the Medical Society of the State of Pennsylvania express its approval of the administrative accomplishments of the State Department of Health, and especially commend the crusade against venereal diseases and the efforts being made for the better care of children predisposed to tuberculosis.

The motion was seconded by Dr. Lawrence Litchfield, Pittsburgh, and carried.

Installation of President Litchfield

Retiring President Hartman: A year ago, when I was inducted into office as President of this Society, I thought that all the honors the medical profession had to bestow had been conferred upon me. I now have the honor and privilege, not of introducing—you all know him—but of presenting Dr. Lawrence Litchfield, your President.

Dr. Litchfield proceeded to read his Presidential Address, "The Lure of Medicine," which was published in the October, 1922, Pennsylvania Medical Journal.

President Litchfield: We have had the pleasure during this Session of proposing an amendment to our Constitution by which distinguished scientists who are devoting their lives to the education of medical men may become honorary members of this Society, although they have not a medical degree.

We owe a great debt to Dean Meeker for his painstaking and conscientious work in developing the system of study in the Graduate School of the University of Pennsylvania, and we hope and trust that Dean Meeker will be the first honorary member of the Society to enter the Society without the degree of Doctor of Medicine.

Dean George H. Meeker, Philadelphia: President Litchfield, Members of the Medical Society of Pennsylvania and Guests:

The subject given to me for this occasion is "Concerning University Extension Postgraduate Medical Work." The subject is in an embryonic state, concerning which I shall paint as good a picture as I am able to paint in the fifteen minutes alloted to the subject.

George H. Meeker, Dean of the University of Pennsylvania Graduate School of Medicine, Philadelphia, then read a paper entitled, "Concerning University Extension Postgraduate Medical Work," which was discussed by Drs. George E. de Schweinitz, Philadelphia; Daniel A. Webb, Scranton; Walter F. Donaldson, Pittsburgh; and Lawrence Litchfield, Pittsburgh.

President Litchfield: We have looked forward for many months to an address by Dr. Frank Billings as a representative of the American Medical Association. We have been very fortunate in that Dr. de Schweinitz at the last moment canceled all his engagements and came to be with us to-day. We have also with us Dr. Olin West, who is Acting Secretary of the American Medical Association, and we shall be very glad to hear from him.

Address

Dr. Olin West, Chicago: Mr. President, Members of the Medical Society of Pennsylvania: I want to confess at the very outset to a very decided embarrassment in being called upon to appear before this Society. It is embarrassing for me to come into the very center of medical education and medical culture and presume to talk before the very distinguished group of men who make up the membership of this great old Society. It is embarrassing in the second place to be called upon to appear on this program in the place of Dr. Billings, whose place is extremely hard to fill. The honest use of the word "substitution," Mr. President, implies that the man substituted will be in some measure at least the equivalent of the man substituted for, and the substitute, even when he fulfills to a degree that condition, is always at a disadvantage.

My embarrassment, however, does not at all lessen my appreciation of the privilege of appearing here as the only available representative of the American Medical Association, and I should like to say to you that Dr. Billings, I know, by reason of several conversations I had with him, has been greatly disappointed in his inability to be here to-day. It gives me great pleasure to come here to-day in the humble capacity of Field Secretary of the Association and incidentally as Acting Secretary temporarily, to present greetings and assurances of willing service to this Society, its officers and members, from the headquarters organization of the American Medical Association.

It gives me pleasure also, Mr. President, to bring you greetings, not official, but nevertheless warm and sincere, from the State Association of my own state, that dimple of the universe, old Tennessee, whose organization will, within a very few years, celebrate the centennial of its founding. It gives me pleasure, Mr. President, to be here because this is the Society of the President of our great National Medical organization.

A few years ago, in the early days of the war, my eye happened to catch a little column in the newspaper one night, which was headed, "The Birthdays of Great Men." The first paragraph on that column said, "William H. Welsh, of Baltimore, is seventy-four years old to-day." Just under that was a little paragraph which said, "Albert, the beloved King of the Belgians, is forty-eight years old to-day." And I thought, Mr. President, that I would rather be William H. Welsh, seventy-four years old, than be Albert, King of the Belgians, or any other king that ever sat upon a throne. And I sincerely feel that way about the President of the American Medical Association, Dr. de Schweinitz, who, as a physician, a teacher, a writer, and a research worker, has rendered more beneficial and more permanent service to mankind than any king.

My pleasure, however, Mr. President, at being present here is tinctured with a very real sadness, because here I am very forcibly reminded of the great loss that has come to the American medical profession through the death of Alexander Craig, also a member of this old State Society. The value of the work of Alexander Craig to the American medical profession will never be truly appreciated, because the American medical profession will never know of the immensity of the work which he did, and they will never be able to know or to realize the spirit in which that work was done. As his substitute, I have come to know something of it, and I want you, gentlemen, to realize that never have I known of such a tremendous mass of real serviceable work having been done by any man as was done by Dr. Craig. I was called upon to write something about Dr. Craig after his death; I tried to do it, and what I prepared was in the shape of a little memorial page:

> "Alexander Righter Craig, for eleven years Secretary of the American Medical Association, an upright physician, a faithful and efficient servant of the American medical profession, a loyal friend, a Christian gentleman."

I do not know what else could be said. Dr. Craig was an upright physician. No man ever upheld any more faithfully or any more forcibly the traditions of the profession than did Alexander R. Craig. No man has ever given more loyal service to the American medical profession than did Dr. Craig. No man ever exemplified more beautifully the spirit of the Christ in whom he believed than did Dr. Craig. This Society and the whole medical profession of the country has suffered a loss that will be hard to realize and will be hard to overcome.

Mr. President, Dr. de Schweinitz stated in his remarks before the Society this morning that he would not discuss the policies of the Board of Trustees of the American Medical Association, but that perhaps I would. It is not for me to discuss the policies of the American Medical Association nor of its Board of Trustees. In so far as I have been able to familiarize myself with the policies of the Board of Trustees, they have one policy—to do everything humanly possible for them to do to advance the interests of the medical profession and thereby to advance the interests of the public and humanity in general. That policy is being pursued, and the work of the American Medical Association is being carried on with that one purpose in view—the advancement of the cause of medicine, in the interests of medical men and in the interests of humanity.

The American Medical Association is seventy-five years young this year—not seventy-five years old, but seventy-five years young. I believe that the future is much greater for the Association than the past, with all its accomplishments. It is interesting and it is a little bit surprising, perhaps, for one who reads the history of the American Medical Association and of the profession in this country to find as he reads that the same problems which confronted that organization in the very year of its foundation are the problems which are demanding attention and receiving discussion by the men of the present day medical organizations. In the year 1847 the President of the Association decried the fact that the medical profession was full of unqualified men, that quacks and fakers were about to take the earth. The problems of medical education were uppermost in the minds of the men in attendance at that first meeting of the American Medical Association. The men who went to that meeting, some of them riding horseback for hundreds of miles to get to Baltimore, commented and made mention of the fact that towns and cities through which they passed on their way were crammed full of doctors, and that there were no doctors in the country. There was a great deal of pessimism in those days, such as has been evidenced to some extent in later years. My own feeling is that there is really no occasion for it. The American medical profession has been here for all these many, many years. It is here to-day. It is going to be here as long as there is a need for a medical profession under God's sun. And when it comes that there is no need for a medical profession, then it is going to disappear, and not before.

I think it would be better for the organization and for the profession if the entire medical profession of the country understood the magnitude of the work that is being done in their interest and in the interest of the general public. You are still familiar, of course, with the Journal of the American Medical Association, the weekly journal, with a subscription list of approximately 84,000, and with the special journals —quite a number of them—which are also issued by the organization. The great weekly Journal of the Association is, of course, the backbone of the organization, which leads me to say, Mr. President, that there are those of us who believe that the success that has been attained by the American Medical Association and by the Medical Society of the State of Pennsylvania has been attained because of the fact that scientific medicine has been always the first consideration.

One of the very important departments of the American Medical Association of which little is heard in a meeting of this kind, is the Biographical Department of that Association, through which is maintained a system of records of the entire medical profession of this country. The medical student, when he enters college, is listed in the records of the American Medical Association. Every physician in this country has information about him on record in the files of the American Medical Association. That is a stupendous work, a work of tremendous importance to the medical profession, and one which ought to have the coöperation of every member. But it is very difficult to get men to supply the needed information about themselves that would make these files as complete as it is hoped they will eventually be made.

One of the practical benefits that comes from that system of records is that it protects the public. It protects the medical organization against men from whom they need to be protected.

Another very important department of the American Medical Association, whose manager is one of the most earnest workers in the interests of scientific medicine in this country, and a man of whom you never hear, Dr. Arthur J. Cramp, is the Propaganda Department, which makes it its primary business to protect the profession and the public against impositions of different characters. You see in the columns of your weekly Journal matter that is presented under the head of the Propaganda Department. You have no idea how much labor is involved, how much detail is involved in the collection of that information. You read it and pass it on as a matter of course. It is a service, but the disposition is to take too many things as a matter of course, and there has been little true appreciation of the tremendous value of the work of that department. The quacks and the fakers and the thieves and the scoundrels have been persistently and fearlessly shown up through the Propaganda Department, and the work of Dr. Cramp and his colaborers in that department, has been of inestimable value to the profession and to the public of this country.

The Council on Pharmacy and Chemistry has done a wonderful work in an investigative way to determine what is good and what is not good for therapeutic use.

The Council on Health and Public Instruction you are more or less familiar with. Recently the work of legislation has been separated from that department and the Board of Trustees, authorized by the House of Delegates at St. Louis, has established a Bureau of Legal Medicine and Legislation which bids fair, I think, to become one of the most valuable agencies of the American Medical Association. Dr. William C. Woodward, in charge of that bureau, is hard at work on many problems of great importance and great interest to the profession.

You are all familiar, of course, with the work of the Council on Education and Hospitals of the American Medical Association. It is engaged at the present time in making a very intensive survey of clinics and dispensaries, and their figures have been published. As time goes on and as facilities are obtained the truth will be arrived at with respect to these institutions.

It seems to me particularly fitting that the great State of Pennsylvania, which, as I said a while ago, is the very foundation of medical education and medical culture, should be the state to develop this remarkably effective scheme which has been outlined here to-day by Dean Meeker. It is not a new proposition, as you learned from the paper, but so far as I am advised this is the most effective scheme that has been outlined anywhere for carrying on postgraduate work. Dr. Webb, it seemed to me, hit the nail on the head when he said that a system to be effective must demand work from the student; and Dr. Donaldson mentioned a point which I think is important when he brought out the fact that at the completion of this two years' course in postgraduate instruction a man who had finished the course would be given definite evidence of his participation in the course and his having proved himself as worthy of recommendation and as having done the work of that course. Those things have been wanting in other schemes of this nature which have been devised with which I am familiar, and I want to say to you gentlemen that the progress of this plan in Pennsylvania will be watched with eager eyes throughout this country.

The other departments of the American Medical Association are too numerous for me to bring to your attention in any detail whatsoever, but I would like just for a moment to present to you the matter of the Bulletin of the American Medical Association, originally started as a Council Bulletin, but which it is now proposed to expand into a general organization bulletin. We hope to make it an open forum for the discussion of all matters of interest to the profession other than strictly scientific matters; matters of organization, matters of medical economics; whatever is of interest and importance to the members of the profession we hope to have discussed in that bulletin.

I want to invite the officers of this Society and its component societies, and the members of this Society, to utilize the columns of the American Medical Association Bulletin for the discussion of whatever they believe will be profitable for discussion in its pages, and I hope that that invitation will be taken advantage of. There will be very little of editorial comment in the bulletin at all. The matter that it will carry will be selected from other journals throughout the country and throughout the world, and from such material as is provided for publication by the officers of the societies and by the members of those societies.

I happen to occupy, Mr. President, the position of Field Secretary of the American Medical Association, a position which has been created by the Board of Trustees in the hope that the facilities of that organization for useful service to the state, district and county societies and their members might be increased, and that the service of the Association might be expanded.

It has been a great privilege to me to come to Pennsylvania and to see the working of this great State Medical Society, because here I have gotten ideas that I will be able to pass on to other State Societies not so fortunate as yours, which are groping to find effective methods such as you have applied; and it is for that reason, among other things, Mr. President, that I greatly appreciate the courtesies that have been extended to me.

Adjourned at 1 p. m.

Lawrence Litchfield, Chairman;
Walter F. Donaldson, Secretary.

WEDNESDAY, OCTOBER 4, 1922

The meeting was called to order at 9:40 a. m. by the acting chairman, Dr. J. B. F. Wyant, Kittanning.

Dr. J. Allen Jackson, Danville, presented a paper prepared by himself and Dr. Horace V. Pike, Danville, entitled, "The Relation of the Mental Hospital to the Community," which was discussed by Drs. Theodore Diller, Pittsburgh; C. C. Wholey, Pittsburgh, and Horace V. Pike, in closing.

Dr. DeForest Willard, Philadelphia, read a paper entitled "Tuberculosis of the Bones and Joints." (Lantern demonstration.)

Dr. Franklin Buzby, Philadelphia, read a paper on "Syphilis of the Bones and Joints." (Lantern demonstration.)

The discussion on the two latter papers was opened by Dr. J. Torrance Rugh, Philadelphia, and continued by Drs. George M. Dorrance, Philadelphia; James O. Wallace, Pittsburgh; Albert E. Roussel, Philadelphia; J. P. Crozer Griffith, Philadelphia; and Drs. DeForest Willard, Philadelphia, and B. Franklin Buzby, Philadelphia, in closing.

(President Litchfield in the chair.)

The following resolution was presented for adoption:

Whereas, By the recent decision of the Workmen's Compensation Board of Pennsylvania handed down by Harry A. Mackey, its Chairman, and later upheld by the Court of Schuylkill County, surgeons on the staffs of hospitals are not permitted to collect fees from compensation patients treated in the wards of hospitals of the state; therefore, be it

Resolved, That the Committee on Public Policy and Legislation be instructed and are hereby empowered to draft such amendments to Section 306 of the Compensation Act of the Legislature as will correct the above unfair treatment of the physicians of the state as well as any other acts which in their judgment need correction.

DR. WILLIAM L. ESTES, (South Bethlehem): I wish to second the motion for the adoption of this resolution, and in doing so, I wish to say to the members of this Society that it is only by eternal watchfulness that we can protect our interests, and I hope that we will vote upon this resolution at once.

PRESIDENT LITCHFIELD: The natural disposition of this resolution is, of course, to refer it to the House of Delegates.

DR. ESTES: It will do no harm for this body to endorse it.

DR. BUSH: There are a great many misunderstandings on this Compensation Act. Chairman Mackey, of the Compensation Board, says that every citizen of the state knew perfectly well that the matter was being considered by the legislature for years. The Compensation Board puts all of the blame for imperfections upon the medical profession and takes none of it themselves. Mr. Mackey admits that it was the intent of the law that the doctors were to be paid for their services. He writes in his last opinion that the intent was well understood at the time. Now, I ask, if he and the other members of the board and legislators and everyone concerned admit that the intent of the law was well understood, why are the doctors deprived of their fee? Why does he say that we must amend the law if he does not carry out what he admits was the intent, even if the phraseology is not, to his mind, clear. I am speaking of Section 306, Paragraph "E" of the act, and maintain that the amended act is perfectly clear to anyone who wishes to understand the law; but if it be to the interest of certain corporations, perhaps insurance companies or others, not to understand the law, then points may be raised which cloud the issue. Now, you probably know, all of you who followed the amendment, that at the time the amendment was passed and prior thereto, there was no discussion at all about the doctor not being paid when the case was treated in a hospital. I am informed that the insurance companies promptly raised their rates to cover this added expense. I maintain that we must do more than further amend the law. We must see to it that the provisions of the law are carried out. I regret to say, also, that some hospitals have taken the same view that Mr. Mackey takes, that the surgeon cannot charge a fee if a case is treated in the ward. It must be perfectly obvious to everyone that these compensation cases are not charity cases. Mr. Mackey says that this law was intended to mete out justice—not charity. Beneficiaries under the law have earned the right to the best of treatment, and they shall have it, and such services should be paid for. Therefore, I maintain that while I heartily approve of the resolution so far as it goes, we must see to it that the law is carried out. If we amend the law again there may be some clever attorney who will again find a way of side-tracking the doctor. So it seems to me that the Committee on Public Policy and Legislation should have behind it every member of our Society. If the committee has that support we will get our just dues; otherwise we will not.

PRESIDENT LITCHFIELD: The chair must remind you that the disposition of a resolution of this kind is to the House of Delegates. The chair has allowed some discussion of this question because the chair feels that anything that brings the lesson home to the medical profession, that we are all negligent of our obligations to the community when we do not watch legislation more closely, is worth while.

DR. ESTES moved that this resolution be approved and referred to the House of Delegates.

DR. THEODORE B. APPEL, (Lancaster): I think, in view of the fact that the House of Delegates has adjourned and will probably not meet again during this session, that it would be proper for this General Meeting of the Society to endorse this resolution, and then refer it to the committee with the endorsement of the Society and with power to act.

PRESIDENT LITCHFIELD: Dr. Estes, do you accept this as an amendment?

DR. ESTES: Yes.

PRESIDENT LITCHFIELD: It is moved and seconded that this resolution be approved, and in the event that the House of Delegates does not meet again during this session, that it be referred directly to the Committee on Public Health Legislation.

The motion was carried.

Dr. Frederick B. Utley, Pittsburgh, read a paper entitled "Anthrax," which was discussed by Drs. Albert J. Bruecken, Pittsburgh; Albert E. Roussel, Philadelphia; and Frederick B. Utley, Pittsburgh, in closing.

Dr. Cloyd G. Brumbaugh, Huntingdon, read a paper, entitled, "Present Standards of Obstetrical Practice in Rural Pennsylvania."

Dr. G. Victor Janvier, Lansdowne, presented a paper entitled "The More Important Obstetrical Emergencies Met by the General Practitioner," and asked to be excused from reading it, confining his remarks to the closing discussion.

Dr. Harold Miller, Pittsburgh, substituting for Dr. John Cooke Hirst, Philadelphia, talked ten minutes on "Indications For, and Technique of Cesarean Section." Discussion of the above papers was opened by Dr. Samuel J. Waterworth, Clearfield, and continued by Drs. William N. Bradley, Philadelphia; Charles E. Thomson, Scranton; J. S. Callen, Shenandoah; Charles J. Cummings, Williamsport; J. D. Donnelly, Harrisburg; Lawrence Litchfield, Pittsburgh, and Drs. Cloyd G. Brumbaugh, Huntingdon; Harold Miller, Pittsburgh, and G. Victor Janvier, Lansdowne, in closing the discussion on their respective papers.

Adjourned at 6:00 p.m.

J. B. F. WYANT, *Chairman;*
C. B. LONGENECKER, *Secretary.*

THURSDAY, OCTOBER 5, 1922

The meeting was called to order by the president, Lawrence Litchfield, Pittsburgh, at 2:00 p.m.

Dr. S. Leon Gans, State Department of Health, Harrisburg, read a paper, entitled "State Control of Syphilis."

Dr. J. Bruce McCreary, State Department of Health, Harrisburg, read a paper entitled "State Control of Diphtheria."

Dr. Edmund B. Piper, Philadelphia, read a paper, entitled "State Control of Puerperal Sepsis."

There was no discussion of these papers, but Dr. McCreary presented the compliments of the Commissioner of Health and expressed the Commissioner's appreciation of the response from the physicians of the state to the questionnaires, the study of diphtheria having been made by questionnaires sent to all physicians in the state who were unfortunate enough to lose cases of diphtheria. Over ninety per cent. responded to the questionnaires. Many helpful suggestions were received from the physicians of the state. The Commissioner is highly appreciative of the way in which the physicians of the state have coöperated in the study of diphtheria.

PRESIDENT LITCHFIELD: In the name of the Medical Society of the State of Pennsylvania I wish to extend our thanks to the Commissioner for his courtesy in sending you men here to speak to us, and for his ever present courtesy in his dealing with the profession; and also to state that the profession appreciates the work that Dr. Martin has done. One of the by-products of the great war has been that it has driven venereal diseases out into the open; it has educated communities all over the country to call a spade a spade and to go after venereal diseases. Men like Dr. Martin are going to do incalculable good to the commonwealth they serve and the race at large.

Those of you who were present at the Medical Section at the opening meeting heard Dr. Beardsley's very timely and fitting tribute to our dear friend, Dr. M. Howard Fussell. Since the meeting in Philadelphia, Dr. Fussell has been taken away from us and I wish to add my word of tribute. Dr. Fussell was always present at the State Society meetings. He was one of the pillars in all the discussions of medical subjects, and his was one of the faces that we always liked to see.

Dr. Reed Burns, Scranton, read a paper entitled "Epigastric Angina," which was discussed by Drs. Arthur C. Morgan, Philadelphia; J. Norman White, Scranton; Ernest J. Laplace, Philadelphia; Martin T. O'Malley, Scranton; and Reed Burns, Scranton, in closing.

Dr. Frank H. Rimer, Pittsburgh, read a paper entitled "Differential Diagnosis of Exanthemata," which was discussed by Drs. Frank C. Knowles, Philadelphia, and Frank H. Rimer, Pittsburgh, in closing.

Dr. Frederick Jacob, Pittsburgh, read a paper prepared by himself and Dr. William H. Guy, Pittsburgh, entitled "Differential Diagnosis of Some Parasitic Skin Diseases," which was discussed by Dr. Frank C. Knowles, Philadelphia.

(Recess taken from 4:20 to 4:30 p. m.)

Dr. William G. Spiller, Philadelphia, read a paper entitled "Diagnosis of Brain Tumor."

Dr. Walter D. Dandy, Baltimore, presented a series of slides epitomizing his impressions in regard to brain tumor. These papers were discussed by Dr. E. E. Mayer, of Pittsburgh, and Dr. William G. Spiller, of Philadelphia, in closing.

Dr. Thomas G. Simonton, (Pittsburgh): Mr. Chairman, I should like to offer a resolution of thanks to Dr. Dandy for coming here from Baltimore to entertain us with his slides and discussion, and also to Dr. Spiller. I ask for a rising vote of thanks. (The rising vote of thanks was given.)

Adjourned at 5:30 p. m.

Lawrence Litchfield, *Chairman;*
Walter F. Donaldson, *Secretary.*

MINUTES OF THE SECTION ON MEDICINE

Tuesday, October 3, 1922

The meeting was called to order at 2 p. m., by the Chairman of the Section, Dr. Edward J. G. Beardsley, of Philadelphia.

Dr. Beardsley then read "The Chairman's Address," which was not discussed.

Chairman Beardsley read the following telegram:

Chicago, Ill.

Dr. E. J. G. Beardsley:
Personal illness prevents attendance at Scranton meeting. Regret exceedingly embarrassment of Section Officers and self. Shall write later.
Frank Billings.

Dr. Josephus T. Ullom, Philadelphia, read a paper entitled "General Practice; Its Boundaries," which was discussed by Drs. Charles H. Miner, Wilkes-Barre; J. Quincy Thomas, Norristown; and Lee M. Goodman, Jersey Shore.

Dr. Frank A. Evans, Pittsburgh, read a paper entitled "The Differential White Blood Cell Count as an Aid in Diagnosis and Prognosis in Pernicious Anemia," which was discussed by Drs. George B. Sickel, Chester; O. H. Perry Pepper, Philadelphia; H. W. Jones, Philadelphia; W. B. Crawford, Philadelphia; William W. G. Maclachlan, Pittsburgh; and Frank A. Evans, Pittsburgh, in closing.

Dr. Alexander H. Colwell, Pittsburgh, read a paper entitled "Treatment of Pernicious Anemia," which was discussed by Drs. John A. Lichty, Pittsburgh; J. S. Crawford, Ingram; Judson Daland, Philadelphia; Roy R. Snowden, Pittsburgh; John W. Boyce, Pittsburgh; Edward J. G. Beardsley, Philadelphia; and Dr. O. H. Perry Pepper, Philadelphia.

Dr. O. H. Perry Pepper, Philadelphia, read a paper entitled "The Importance of Fluid Intake in the Treatment of Kidney Insufficiency," which was discussed by Drs. Roy R. Snowden, Pittsburgh; J. H. Barach, Pittsburgh; and John A. Lichty, Pittsburgh.

Dr. George A. Clark, Scranton, read a paper entitled "A Physiological Consideration of Nephritis" (Lantern Demonstration), which was discussed by Drs. Harold W. Jones, Philadelphia; Edward Weiss, Philadelphia; William W. G. Maclachlan, Pittsburgh; W. S. Russell, Steelton; and George A. Clark, Scranton, in closing.

Adjourned at 5:30 p. m.

Wednesday, October 4, 1922

The meeting was called to order by the Chairman at 2 p. m.

Dr. Edgar M. Green, Easton, read a paper entitled "Report of a Case of Epidural Abscess of the Spinal Canal" (Lantern Demonstration), which was discussed by Drs. Nathaniel Winkelman, Philadelphia, and Edgar M. Green, in closing.

The Chairman of the Executive Committee, Dr. George E. Holtzapple, of York, presented the report of the Executive Committee, in which Dr. Adam J. Simpson, of Chester, was nominated as Chairman for the ensuing year, and Dr. Charles Falkowsky, of Scranton, as Secretary. These gentlemen were unanimously elected as the officers of the Section for the coming year.

Dr. Henry R. M. Landis, Philadelphia, read a paper entitled "Anthracosis" (Lantern Demonstration), which was discussed by Drs. Robert A. Keilty, Danville; Jonathan M. Wainwright, Scranton; J. S. Callen, Shenandoah; Edgar M. Green, Easton; and Henry R. M. Landis, Philadelphia, in closing.

Dr. Theodore H. Weisenburg, Philadelphia, read a paper entitled "The Management of Mental Cases by the General Practitioner," which was discussed by Drs. J. Allen Jackson, Danville; Ralph Pemberton, Philadelphia; J. Quincy Thomas, Norristown; and Theodore H. Weisenburg, Philadelphia, in closing.

Dr. Bernard S. Oppenheimer, New York, read a paper entitled "Prognosis in Myocardial Disease" (Lantern Demonstration), by invitation, which was discussed by Drs. Edward J. G. Beardsley, Philadelphia; Howard G. Schleiter, Pittsburgh; S. Calvin Smith, Philadelphia; J. William Wood, Chester; and Bernard S. Oppenheimer, in closing.

Dr. Joseph Barach, Pittsburgh, read a paper entitled "Arterial Hypertension, Etiological Factors" (Lantern Demonstration), which was discussed by Drs. Ralph Pemberton, Philadelphia; Edward J. G. Beardsley, Philadelphia; Roy R. Snowden, Pittsburgh; Bernard S. Oppenheimer, New York; Henry Pleasants, Jr., West Chester; Vere Treichler, Elizabethtown; and Joseph Barach, in closing.

Dr. John W. Boyce, Pittsburgh, read a paper entitled "Clinical Determination of Heart Size" (With X-Ray Photographs), which was discussed by S. Calvin Smith, Philadelphia; Howard G. Schleiter, Pittsburgh; and John W. Boyce, Pittsburgh, in closing.

Adjourned at 5:45 p. m.

Thursday, October 5, 1922

The meeting was called to order by the Chairman at 9:00 a. m.

Dr. George E. Holtzapple, York, read a paper entitled "Differential Diagnosis of Diseases of the Pancreas," which was discussed by Drs. Elmer H. Funk, Philadelphia; William W. G. Maclachlan, Pittsburgh; Lawrence Litchfield, Pittsburgh; Truman G. Schnabel, Philadelphia; Alexander Armstrong, White Haven; J. I. Johnston, Pittsburgh; Irwin J. Moyer, Pittsburgh; and George E. Holtzapple, York, in closing.

Dr. Benson A. Cohoe, Pittsburgh, read a paper entitled "The Present Status of Endocrine Therapy," which was discussed by Drs. Lawrence Litchfield, Pittsburgh; Arthur C. Morgan, Philadelphia; and Benson A. Cohoe, Pittsburgh, in closing.

Dr. Edward E. Mayer, Pittsburgh, read a paper entitled "Myoclonic Attacks and Their Significance," which was discussed by Drs. Cornelius C. Wholey, Pittsburgh; Theodore Diller, Pittsburgh; and Edward E. Mayer, in closing.

The Chairman introduced Dr. Sydney R. Miller, of Baltimore, who delivered an address to the Section, on "The Renaissance of the General Practitioner," in substitution for Dr. Frank Billings, of Chicago. The

Chairman called upon Dr. Howard G. Schleiter, Pittsburgh, to thank Dr. Miller on behalf of the Section for his address.

Dr. Alexander Armstrong, White Haven, read a paper entitled "Pulmonary Tuberculosis and Appendicitis," which was discussed by Dr. Howard G. Schleiter, Pittsburgh.

Dr. William W. G. Maclachlan, Pittsburgh, read a paper entitled "The Clinical Aspect of Primary Cancer of the Lung" which was discussed by Drs. George Morris Piersol, Philadelphia; Albert E. Roussel, Philadelphia; and William W. G. Maclachlan, Pittsburgh, in closing.

Dr. Truman G. Schnabel, Philadelphia, read a paper entitled "The Value of Test Meal Studies," which was discussed by Drs. J. Quincy Thomas, Norristown, and Truman G. Schnabel, Philadelphia, in closing.

The Secretary read a paper for Dr. Hobart A. Hare, of Philadelphia, entitled "Some Practical Points in Diagnosis and Treatment," which was discussed by Drs. J. I. Johnston, Pittsburgh; Truman G. Schnabel, Philadelphia; and H. C. Westervelt, Pittsburgh.

Adjourned at 1:00 p. m.

MEMBERS REGISTERED IN SECTION ON MEDICINE

Adams County Society—E. A. Miller, East Berlin.

Allegheny County Society—J. L. Foster, Blawnox; L. F. Ankrim, J. H. Barach, C. J. Bowen, J. W. Boyce, W. H. Cameron, B. A. Cohoe, A. H. Colwell, J. S. Crawford, F. A. Evans, G. W. Grier, F. M. Jacob, J. I. Johnston, H. L. Jones, J. A. Lichty, L. Litchfield, W. W. Maclachlan, C. B. Maits, E. E. Mayer, W. H. Mayer, I. J. Moyer, G. W. McNeil, H. G. Schleiter, L. L. Schwartz, T. G. Simonton, R. R. Snowden, J. M. Thorne, F. B. Utley, C J. Vaux, J. W. Worrell, Pittsburgh.

Armstrong County Society—E. R. McNutt, C. C. Parks, Leechburg; J. B. F. Wyant, Kittanning.

Beaver County Society—L. B. Miller, New Brighton; R. M. Patterson, Beaver Falls.

Bedford County Society—W. F. Enfield, Bedford.

Berks County Society—A. H. Bauscher, J. E. Livingood, I. G. Shoemaker, Reading.

Blair County Society—A. S. Kech, Altoona.

Bradford County Society—S. D. Conklin, Sayre; H. C. Down, Towanda; J. E. Everett, Sayre; C. N. Haines, Sayre; P. H. Schwartz, Towanda; C. L. Stevens, Athens.

Bucks County Society—A. F. Myers, Blooming Glen.

Cambria County Society—H. F. Tomb, Johnstown.

Carbon County Society—A. Armstrong, White Haven; J. A. Trexler, Lehighton.

Center County Society—P. H. Dale, State College; J. L. Seibert, Bellefonte.

Chester County Society—W. W. Betts, Chadds Ford; M. Margolies, Coatesville; H. Pleasants, Jr., J. Scattergood, West Chester.

Clarion County Society—C. A. Fitzgerald, Clarion.

Clearfield County Society—J. M. Quigley, H. A. Woodside, Clearfield; H. L. Woodside, Bigler.

Clinton County Society—M. D. Campbell, Logantown.

Columbia County Society—H. S. Buckingham, F. R. Clark, H. V. Hower, R. F. Wear, Berwick.

Cumberland County Society—J. B. McCreary, Shippensburg.

Dauphin County Society—D. S. Funk, J. B. McAlister, C. R. Phillips, Harrisburg; J. R. Plank, Steelton; A. Z. Ritzman, Harrisburg; W. S. Russell, Steelton.

Delaware County Society—J. R. T. Gray, Jr., Chester; J. B. Roxby, Swarthmore; G. B. Sickle, A. Simpson, J. W. Wood, Chester.

Elk County Society—S. G. Logan, Ridgway.

Erie County Society—H. S. Falk, Erie.

Fayette County Society—R. E. Heath, Fairchance.

Jefferson County Society—I. R. Mohney, Brookville; J. H. Murray, Punxsutawney.

Lackawanna County Society—W. Van Doren, Archbald; L. C. Druffner, Avoca; F. L. Niles, J. J. Thompson, Carbondale; W. H. Newman, Clarks Summit; C. A. Zeller, Dalton; M. A. Gibbon, F. M. Ginley, F. L. Swift, F. W. Stevens, Dunmore; L. Breskman, A. S. Cantor, J. W. Grant, P. A. Lonergan, Dickson City; H. M. Mittleman, Duryea; J. L. Conarton, Mayfield; J. W. Knedler, Moscow; E. F. McGinty, Mt. Pocono; W. F. Corcoran, E. F. Davies, U. P. Horger, W. J. G. Salmon, Old Forge; J. A. Carr, F. A. Carroll, M. Finkelstein, J. J. O'Connor, J. J. Price, V. A. Shlanta, V. Victor, Olyphant; J. B. Grover, S. H. Voorhees, Peckville; B. E. Costello, Vandling; D. E. Berney, F. A. Bartecchi, J. J. Brennan, J. D. Butzner, D. A. Capwell, A. C. Clarke, P. J. Davies, W. T. Davis, E. Deantonio, W. K. Dolan, W. M. Donovan, R. J. Flynn, H. D. Gardner, F. C. Garvey, R. J. Garvey, H. W. Gibbs, I. Goodman, S. Gross, H. Halpert, P. J. Heston, Helen Houser, D. J. Jenkins, R. B. MacKeage, W. E. Keller, J. F. Kelly, E. L. Kiesel, M. A. Kline, H. M. Kraemer, J. D. Lewis, G. Lindsay, J. J. Lonsdorf, W. Lynch, J. C. Miller, P. J. McDonnell, N. E. Newbury, C. E. Murrin, S. Z. Myers, L. A. Nealon, S. Nowicki, M. T. O'Malley, W. J. O'Malley, J. E. O'Toole, W. A. Peck, J. L. Rea, Jr., J. C. Reifsnyder, R. J. Ritz, F. G. Robinson, J. I. Robison, M. M. Rosenburg, J. Kulczycki, I. W. Severson, F. J. Sedlack, J. R. Skeoch, T. Sureth, J. Villone, G. Von Poswik, P. H. Walker, A. T. Walsh, J. D. Wilson, F. R. Wheelock, Scranton.

Lancaster County Society—E. B. Bricker, Lititz; L. M. Bryson, Paradise; V. Treichler, Elizabethtown; C. E. Helm, Quarryville; J. F. Herr, Landisville; F. G. Hartman, J. E. Hostetter, H. C. Kinzer, Lancaster.

Lehigh County Society—A. E. Freese, Allentown; C. H. Muschlitz, Slatington; D. H. Parmet, Allentown.

Luzerne County Society—H. I. Evans, Ashley; F. A. Muschlitz, West Pittston; H. M. Neale, Upper Lehigh; H. Rubinstein, Pittston; L. L. Rogers, Sr., Kingston; R. S. Woehrle, Parsons; E. W. Bixby, L. I. Blair, E. J. Flanagan, A. Kaufman, C. Long, E. Richards, J. McNelis, E. E. Wagner, Wilkes-Barre.

Lycoming County Society—W. S. Brenholtz, J. A. Campbell, W. E. Delaney, G. R. Drick, A. F. Hardt, C. E. Shaw, Williamsport; E. Everett, Masten; F. C. Lechner, Montoursville; W. E. Turner, Montgomery.

McKean County Society—M. W. Cox, Kane.

Mercer County Society—F. C. Potter, Mercer.

Mifflin County Society—J. A. C. Clarkson, Lewistown; J. A. Stambaugh, Reedsville.

Montgomery County Society—E. S. Buyers, J. N. Hunsberger, D. Nathan, J. Q. Thomas, Norristown; J. P. Janjigian, R. R. Janjigian, Wilkes-Barre; P. J. Lukens, Ambler; J. B. Sherbon, Pittston; W. J. Wright, Skippack.

Montour County Society—J. A. Jackson, R. A. Keilty, H. V. Pike, Danville.

Northampton County Society—P. R. Correll, E. M. Green, A. L. Kotz, V. S. Messinger, F. A. Sherrer, Easton; F. J. Dever, Bethlehem.

Northumberland County Society—H. W. Gass, R. B. McCay, Sunbury; H. T. Simmonds, Shamokin; E. R. Samuel, Mt. Carmel.

Philadelphia County Society—J. H. Arnett, E. J. G. Beardsley, J. H. Clark, C. A. Codman, B. L. Crawford, J. Daland, R. S. Dorsett, A. S. Doyle, E. H. Funk, S. L. Gans, S. F. Gilpin, J. N. Henry, I. W. Hollingshead, H. W. Jones, H. D. Jump, W. M. Kennedy, G. A. Knowles, C. A. LeCates, J. V. Missett, A. C. Morgan, J. D. McLean, J. A. Murphy, R. Pemberton, O. H. P. Pepper, G. M. Piersol, C. S. Potts, A. E. Roussel, T. G. Schnabel, S. C. Smith, W. L. C. Spæth, W. G. Spiller, J. T. Ullom, T. N. Weisenburg, E. Weiss, G. Wilson, N. W. Winkelman, Philadelphia.

Schuylkill County Society—J. S. Callen, Shenandoah; J. S. Carpenter, M. C. Householder, H. H. Stewart, Pottsville; A. B. Fleming, Tamaqua.

Snyder County Society—P. J. Herman, E. W. Toole, Selinsgrove; J. O. Wagner, Beaver Springs.

Susquehanna County Society—A. J. Denman, D. J. Peck, Susquehanna; E. R. Gardner, W. W. Preston, Montrose; A. E. Snyder, New Milford.

Warren County Society—H. W. Mitchell, Warren.

Washington County Society—E. M. Hazlett, J. B. McKennan, G. W. Ramsey, G. Ramsey, Washington; W. D. Martin, Dunn's Station.

Wayne County Society—E. O. Bang, South Canaan; E. W. Burns, Honesdale; A. Simons, Newfoundland; L. B. Nielsen, Honesdale.

Westmoreland County Society—R. M. Alexander, Bolivar; J. L. Sowash, Irwin.

Wyoming County Society—V. C. Decker, Nicholson; K. J. French, Factoryville; G. M. Kinner, North Mehoopany; W. W. Lazarus, H. L. McKown, T. O. Williams, Tunkhannock.

York County Society—L. M. Hartman, G. E. Holtzapple, York.

MINUTES OF THE SECTION ON SURGERY

Tuesday, October 3, 1922

The Chairman, Dr. Alfred C. Wood, Philadelphia, called the meeting to order at 2:15 p. m., in Room A, Armory, and delivered the Chairman's Address.

Dr. Levi Jay Hammond presented the following motion, which was seconded and carried:

The Surgical Section of the Medical Society of the State of Pennsylvania recommends to the Board of Trustees of the Society that a committee be appointed to devise ways and means by which the medical profession of the State of Pennsylvania can best present its cause in connection with the Pennsylvania Workmen's Compensation Laws.

Dr. Ellis C. Winters, Ford City, read a paper entitled "Empyema." Discussed by Drs. T. Turner Thomas, Philadelphia; Levi J. Hammond, Philadelphia; William L. Estes, Bethlehem; George M. Dorrance, Philadelphia.

Dr. Daniel J. McCarthy, Philadelphia, read a paper entitled "The Etiology of Postoperative Insanities." Discussed by Drs. John L. Atlee, Lancaster; Judson Daland, Philadelphia; Charles S. Potts, Philadelphia; Charles E. Thomson, Scranton; Donald Guthrie, Sayre; W. Wayne Babcock, Philadelphia; Dr. McCarthy, in closing.

Dr. William L. Clarke, Philadelphia, read a paper entitled "Cancer of the Tongue." Discussed by Drs. Alfred Doyle, Philadelphia; John F. Culp, Harrisburg; John E. Atlee, Lancaster; George M. Dorrance, Philadelphia; Dr. Clarke, in closing.

Dr. W. Wayne Babcock, Philadelphia, read a paper entitled "Spinal Anesthesia; a Study of About 15,000 Inductions." Discussed by Drs. William A. Steel, Philadelphia; J. Ralston Wells, Philadelphia; Samuel J. Waterworth, Clearfield; Dr. Babcock, in closing.

Adjourned 5:45 p. m.

Wednesday, October 4, 1922

The Chairman, Dr. Alfred C. Wood, called the meeting to order at 2:10 p. m. and read the report of the Executive Committee, which resulted in the election of Dr. William L. Estes, Jr., Bethlehem, Chairman, and Dr. Harold L. Foss, Danville, Secretary of the Section for the coming year.

Drs. Carl E. Ervin, Danville, and Stanley Conklin, Sayre, gave a "Demonstration of Basal Metabolism Apparatus."

Dr. Charles B. Noecker, Scranton, discussed "Adenomatous Goiter," with demonstration of actual patients; treatment advised.

Dr. Lawrence A. Sheridan, Wilkes-Barre, read a paper entitled "Exophthalmic Goiter" (Dry Clinic). Treatment advised.

Dr. Michael J. Noone, Scranton, read a paper entitled "Colloid Goiter" (Dry Clinic). Treatment advised.

Dr. David Marine, New York City, read a paper entitled "Etiology and Prevention of Simple Goiter."

These papers were discussed jointly by Drs. Lawrence Litchfield, Pittsburgh; Henry D. Jump, Philadelphia; A. E. Roussel, Philadelphia; George W. Reese, Shamokin; Dr. Marine, in closing.

Dr. Donald Guthrie, Sayre, made a motion that the Section express its appreciation to Dr. Marine for his most excellent, scholarly and complete portrayal of this subject. This motion was put and unanimously carried.

Dr. Donald Guthrie, Sayre, read a paper entitled "What Types of Goiter Should Receive Medical Treatment?"

Dr. Harold L. Foss, Danville, read a paper entitled "Surgical Treatment of Goiter."

Dr. George W. Grier, Pittsburgh, read a paper entitled "X-Ray and Radium Treatment of Goiter."

These papers were discussed jointly by Drs. Samuel J. Waterworth, Clearfield; Lloyd G. Cole, Blossburg; Charles H. Frazier, Philadelphia; William S. Newcomet, Philadelphia; Jonathan M. Wainwright, Scranton; A. E. Roussel, Philadelphia; Donald Guthrie, Sayre; David Marine, New York; Harold L. Foss, Danville; George W. Grier, Pittsburgh.

Adjourned 5:45 p. m.

Thursday, October 5, 1922

The Chairman, Dr. Wood, called the meeting to order at 9:25 a. m. Dr. Moses Behrend, Philadelphia, read a paper entitled "The Longevity of Plates and Other Foreign Bodies in the Treatment of Fractures of Long Bones." Discussed by Drs. W. Estell Lee, Philadelphia; William L. Estes, Bethlehem; Charles F. Mitchell, Philadelphia; Charles E. Thomson, Scranton; Harvey C. Masland, Philadelphia; E. C. Murphy, Dr. Randall, in closing.

Dr. William Estes, Jr., Bethlehem, read a paper entitled "Fractures Near the Ankle." Discussed by Drs. Charles F. Mitchell, Philadelphia; W. Estell Lee, Philadelphia; Eugene C. Murphy, Philadelphia; Jonathan M. Wainwright, Scranton; Donald Guthrie, Sayre; Dr. Estes, Jr., in closing.

Dr. Alexander Randall read a paper entitled "Morbidity that Follows Prostatectomy." Discussed by Drs. B. A. Thomas, Philadelphia; Thomas C. Stellwagen, Philadelphia; Leon Herman, Philadelphia; M. Behrend, Philadelphia; A. C. Wood, Philadelphia; Dr. Randall, in closing.

Dr. Bender Z. Cashman, Pittsburgh, read a paper entitled "Peritonitis Following Operations for Cholecystitis of Influenzal Origin." Discussed by Drs. Henry Pleasants, Jr., West Chester; George M. Dorrance, Philadelphia; A. C. Wood, Philadelphia; Dr. Cashman, in closing.

Henry Pleasants, Jr., West Chester, read a paper entitled "The Treatment of Cerebrospinal Syphilis by Lumbar Puncture, Following Intravenous Administration of Neoarsphenamin; Report of Case." Discussed by Drs. Theodore H. Weisenburg, Philadelphia; Sherman F. Gilpin, Philadelphia; Horace V. Pike, Danville; L. F. Gates, Scranton; Thomas C. Stellwagen, Philadelphia; Dr. Pleasants, Jr., in closing.

Dr. Leon Herman, Philadelphia, read a paper entitled "The Importance of Physical Factors in the Prognosis of Renal Infections." Discussed by Drs. Thomas C. Stellwagen, Philadelphia; John B. Lownes, Philadelphia; A. C. Wood, Philadelphia; Dr. Herman, in closing.

Adjourned 1:45 p. m.

MEMBERS REGISTERED IN SECTION ON SURGERY

Allegheny County Society—W. M. Woodward, McKeesport; R. J. Behan, B. Z. Cashman, W. F. Donaldson, R. M. Entwisle, D. B. Ludwig, H. A. Miller, W. A. Nealon, W. Sahm, J. O. Wallace, E. A. Weiss, Pittsburgh.

Armstrong County Society—E. C. Winters, Ford City.

Beaver County Society—C. B. Forcey, Ambridge; J. H. Wilson, Beaver.

Berks County Society—W. H. Ammarell, Birdsboro.

Blair County Society—W. A. Nason, Roaring Spring.

Bradford County Society—D. Guthrie, Sayre.

Cambria County Society—R. C. Davis, J. B. Lowman, J. B. McAneny, J. L. Sagerson, Johnstown.

Clearfield County Society—L. F. Stewart, S. J. Waterworth, W. O. Wilson, Clearfield.

Clinton County Society—G. D. Mervine, D. W. Thomas, Lock Haven.

Columbia County Society—W. C. Hensyl, Berwick; J. Bruner, W. O. Hughes, C. B. Yost, Bloomsburg.

Cumberland County Society—H. A. Spangler, Carlisle.

Dauphin County Society—H. F. Gross, E. A. Nicodemus, H. F. Smith, Harrisburg; E. R. Whipple, Steelton.

Delaware County Society—G. S. Armitage, H. M. Armitage, W. E. Egbert, Chester; E. L. Clark, Media; G. V. Janvier, Lansdowne.

Erie County Society—F. Fisher, Jr., Erie.

Huntingdon County Society—C. G. Brumbaugh, H. C. Frontz, F. R. Hutchinson, J. M. Johnston, Huntingdon.

Lackawanna County Society—J. A. Mackintosh, W. W. Probst, Archbald; W. H. Berge, J. J. Daugherty, Avoca; G. L. Higgins, J. J. Niles, Carbondale; S. M. Winter, Duryea; F. T. Cavill, Jessup; J. J. Timlin, Old Forge; J. J. Bendick, Olyphant; R. H. Armstrong, E. R. Simpson, Peckville; E. E. Edwards, Taylor; A. A. Novak, Throop; F. L. Van Sickle, Harrisburg; H. W. Albertson, T. L. Alexander, R. Burns, A. E. Davis, R. Davies, J. N. Douglas, L. M. Elsinger, D. W. Evans, C. S. Gilbert, L. P. Gibbons, E. A. McLaine, J. Newton, C. B. Noecker, M. J. Noone, J. L. Peck, M. I. Pentecost, E. H. Rebhorn, J. P. H. Ruddy, R. C. Shepherd, A. W. Smith, E. Sturge, C. E. Thomson, R. T. Wall, J. M. Wainwright, D. A. Webb, J. N. White, M. J. Williams, B. B. Wormser, Scranton.

Lancaster County Society—J. P. Kennedy, Columbia; T. B. Appel, J. L. Atlee, H. B. Davis, C. R. Farmer, Lancaster.

Lawrence County Society—L. W. Wilson, New Castle.

Lebanon County Society—W. H. Means, Lebanon.

Lehigh County Society—F. S. Boyer, F. A. Fetherolf, Allentown.

Luzerne County Society—V. P. Edwards, Edwardsville; L. Edwards, M. C. Rumbaugh, S. H. Rynkiewicz, C. L. Shafer, H. B. Wilcox, Kingston; J. J. McHugh, Parsons; W. F. Harrison, Plains; T. F. Fleming, A. G. Hinrichs, J. B. Mahon, C. W. Prevost, Pittston; A. Brooks, J. R. Burns, W. Davis, H. W. Deibel, H. A. Fischer, S. L. Freeman, H. B. Gibby, J. L. Howell, G. Malcom, S. M. Wolfe, Wilkes-Barre; A. C. Hazlett, A. B. Smith, Wyoming.

Lycoming County Society—J. Albright, Muncy; L. M. Goodman, C. L. Mohn, Jersey Shore; A. P. Hull, Montgomery.

Monroe County Society—C. B. Rosenkranz, East Stroudsburg.

Montgomery County Society—J. E. Gotwals, Phœnixville; O. C. Heffner, Pottstown; J. T. MacDonald, G. W. Miller, Norristown.

Montour County Society—H. L. Foss, Danville.

Northampton County Society—J. A. Betts, H. C. Updegrove, Easton; W. L. Estes, W. L. Estes, Jr., W. A. Finady, G. A. Petrulias, D. K. Santee, H. J. Schmoyer, W. P. Walker, Bethlehem.

Philadelphia County Society—W. W. Babcock, M. Behrend, B. F. Buzby, W. C. Clark, G. M. Dorrance, C. H. Frazier, F. C. Hammond, L. J. Hammond, W. S. Higbee, F. C. Knowles, W. Krusen, E. Laplace, W. E. Lee, D. Longaker, C. B. Longenecker, C. B. Lull, H. C. Masland, D. J. McCarthy, D. R. MacCarroll, C. F. Mitchell, G. P. Mullen, E. C. Murphy, W. S. Newcomet, J. L. Richards, J. T. Rugh, W. A. Steel, B. A. Thomas, T. T. Thomas, M. P. Warmuth, D. P. Willard, A. C. Wood, Philadelphia.

Schuylkill County Society—J. B. Rogers, Pottsville.

Susquehanna County Society—F. S. Birchard, Montrose; A. J. Taylor, Hopbottom; H. D. Washburn, Susquehanna.

Tioga County Society—L. G. Cole, Blossburg.

Washington County Society—J. H. Corwin, Washington.

Wayne County Society—S. A. Bang, South Canaan.

Westmoreland County Society—B. Haughwout, Derry; W. H. Taylor, Irwin.

York County Society—W. F. Bacon, York.

MINUTES OF THE SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

Tuesday, October 3, 1922

The first session of the Section on Eye, Ear, Nose and Throat Diseases was called to order in the Armory, Scranton, at 2:00 p. m., by the chairman, Dr. George M. Coates, of Philadelphia.

Address of the Chairman, Dr. George M. Coates.

Dr. Charles E. G. Shannon, Philadelphia, read a paper entitled "Eye Symptoms in a Case of Oxycephaly; with a Report of Autopsy."

The discussion of this paper was opened by Dr. William Zentmayer, Philadelphia, and continued by Dr. Crawford, Philadelphia.

Dr. Hunter W. Scarlett, Philadelphia, read a paper on "Some Neuro-ophthalmic Studies of War Injuries." The discussion was opened by Dr. Warren S. Reese, Philadelphia, and continued by Dr. Luther C. Peter, Philadelphia.

Dr. Edward B. Heckel, Pittsburgh, read a paper on "Diagnosis of Palsies of the Extraocular Muscles." The discussion of this paper was opened by Dr. Luther C. Peter, Philadelphia.

Dr. Burton Chance, Philadelphia, read a paper entitled "Etiology of Uveal Disease."

Discussion of this paper was opened by Dr. Lewis H. Taylor, Wilkes-Barre, and was continued by Drs. Edward B. Heckel, Pittsburgh; George W. Carr, Wilkes-Barre, and F. B. Harding, Allentown.

Dr. John B. Corser, Scranton, read a paper entitled "Practical Points in the Extraction of Cataract."

The discussion was opened by Dr. Leonard G. Redding, Scranton, and continued by Drs. Lewis H. Taylor, Wilkes-Barre; George H. Cross, Chester, and Luther C. Peter, Philadelphia.

Dr. William T. Shoemaker, Philadelphia, read a paper entitled "Some Observations on Orbital Growths," discussion of which was opened by Dr. George H. Cross, Chester.

Dr. Seth A. Brumm, Philadelphia, read a paper on "Orbital Affections Depending Upon Disease of the Accessory Sinuses," discussion of which was opened by Dr. Nelson S. Weinberger, Sayre.

Discussion on papers of Drs. Shoemaker and Brumm was continued by Dr. Frederick Fisher, Erie, and Dr. Burton Chance, Philadelphia.

Wednesday, October 4, 1922

The second session of the Section was called to order at 2:00 p. m.

The following cases were presented by Dr. John J. Sullivan, Scranton:

(a) Case of rupture ethmoid cells followed by proptosis of the eyeball with complete fixation. Treated after method of Hurd of New York.

(b) Case of implantation of bone for fallen nose, showing the use of the internasal tissues for implantation.

(c) Implantation case.

(d) Implantation case.

The report of the Executive Committee was presented, resulting in the election of officers as follows: Chairman, Dr. William H. Sears, Huntingdon; Secretary, Dr. Nelson Weinberger, Sayre.

Dr. Harry Peyton Mosher, Boston, Mass., (by invitation) read a paper on "Cardiospasm," discussion of which was opened by Dr. Chevalier Jackson, Philadelphia.

Upon motion of Dr. George B. Jobson, Franklin, and seconded by all present, a standing vote of thanks was accorded Dr. Mosher for the excellent paper presented to the Section.

A Symposium on Headache was presented which included the following papers: Headache from the Standpoint of the Ophthalmologist, by Dr. J. Milton Griscom, Philadelphia; From the Standpoint of the Otologist, by Dr. Geo. W. Mackenzie, Philadelphia; From the Standpoint of the Rhinologist, by Dr. George B. Jobson, Franklin; From the Standpoint of the Neurologist, by Dr. Chas. W. Burr, Philadelphia.

The discussion on the above papers was opened by Drs. G. Oram Ring, Philadelphia; Geo. F. Gracey, Harrisburg, and J. Ferdinand Klinedinst, York, and was continued by Drs. Judson Daland, Philadelphia; Lawrence Litchfield, Pittsburgh; Frederick Fisher, Erie; John F. Culp, Harrisburg, and Lewis Taylor, Wilkes-Barre.

Thursday, October 5, 1922

The third session of the Section was called to order at 9:00 a. m.

Dr. Matthew S. Ersner, Philadelphia, read a paper on "Atypical Mastoiditis."

The discussion was opened by Dr. John J. Sullivan, Jr., Scranton, and was continued by Dr. George W. Mackenzie, Philadelphia; Clinton J. Kistler, Lehighton; William H. Sears, Huntingdon; James A. Babbitt, Philadelphia, and Benjamin H. Shuster, Philadelphia.

Dr. Wells Eagleton, Newark, N. J. (by invitation) read a paper entitled "Otitic Meningitis," the discussion of which was opened by Dr. James A. Babbitt, Philadelphia, and continued by Dr. George W. Mackenzie, Philadelphia.

Dr. Fielding O. Lewis, Philadelphia, read a paper entitled "Early Diagnosis and Treatment of Malignant Disease of the Larynx." (Lantern demonstration.)

The discussion was opened by Dr. R. F. Ridpath, Philadelphia, and continued by Dr. Harry P. Mosher, Boston, Mass.

Dr. Robert F. Ridpath, Philadelphia, read a paper on "Voice Production," the discussion of which was opened by Dr. Matthew S. Ersner, Philadelphia, and continued by Dr. Robert A. Keilty, Danville.

Dr. Reid Nebinger, Danville, read a paper on "Complete Tonsillectomy."

The discussion was opened by Dr. Clinton J. Kistler, Lehighton, and was continued by Drs. George R. Corson, Pottsville; Solis-Cohen, Philadelphia; Fielding O. Lewis, Philadelphia; George M. Coates, Philadelphia, and William H. Sears, Huntingdon.

Dr. Frederick J. Bishop, Scranton, read a paper entitled "Some Principles Involved in the Bronchoscopic Removal of Foreign Bodies; With Illustrative Cases." (Lantern demonstration.)

The discussion was opened by Dr. Ellen J. Patterson, Pittsburgh, and continued by Drs. William A. Hitschler, Philadelphia; Fielding O. Lewis, Philadelphia, and Harry Peyton Mosher, Boston, Mass.

During the course of Thursday's meeting, Dr. Coates retired and the new officers assumed their places, Dr. Sears presiding for the balance of the meeting.

At the close of the meeting Dr. Sears congratulated the members on their very splendid attendance at the sessions.

MEMBERS REGISTERED IN SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

Allegheny County Society—E. B. Heckel, E. J. Patterson, F. H. Rimer, Pittsburgh.

Bradford County Society—N. S. Weinberger, Sayre.

Bucks County Society—R. C. Magill, New Hope.

Cambria County Society—W. E. Grove, Johnstown.

Carbon County Society—J. J. Bellas, Lansford; C. J. Kistler, Lehighton.

Center County Society—C. E. G. Shannon, State College.

Columbia County Society—H. Bierman, Bloomsburg; M. W. Freas, Berwick.

Dauphin County Society—J. F. Culp, H. H. Farnsler, G. F. Gracey, Harrisburg.

Delaware County Society—G. H. Cross, C. I. Stiteler, Chester.

Elk County Society—J. C. McAllister, Ridgway.

Franklin County Society—F. N. Emmert, Chambersburg.

Huntingdon County Society—W. H. Sears, Huntingdon.

Lackawanna County Society—J. V. Kearney, Archbald; A. G. Anderson, Carbondale; R. B. Mackey, Montrose; F. J. Bishop, H. B. Cornell, J. B. Corser, F. A. Cross, E. A. Curtin, G. E. Dean, C. L. Frey, F. P. Hollister, P. Kearney, J. C. Moyer, G. D. Murray, E. L. Peet, L. G. Redding, W. M. Reedy, E. B. Shaul, J. J. Sullivan, Jr., Scranton.

Lancaster County Society—W. G. Fox, J. P. Roebuck, T. C. Shookers, Lancaster.

Lebanon County Society—J. J. Light, Lebanon.

Lehigh County Society—F. B. Harding, Allentown.

Luzerne County Society—T. R. Gagion, U. A. James, Pittston; G. L. Hoffman, J. E. Scheifly, Kingston; S. W. Blazejewski, G. W. Carr, J. V. Connole, A. E. Foster, O. F. Kistler, N. L. Schappert, L. H. Taylor, Wilkes-Barre.

Lycoming County Society—J. C. Brown, W. F. Kunkle, Williamsport.

Mercer County Society—M. E. MacBride, Sharon.

Montgomery County Society—E. G. Kriebel, F. C. Parker, Norristown.

Montour County Society—R. Nebinger, J. H. Sandel, Danville.

Northampton County Society—P. H. Kleinhans, P. H. Walter, Bethlehem.

Northumberland County Society—J. E. Ratajski, Scranton; L. E. Schoch, Shamokin.

Philadelphia County Society—P. L. Balentine, C. R. Bridgett, S. A. Brumm, C. W. Burr, B. Chance, G. M. Coates, S. Cohen, W. J. Creighton, J. W. Croskey, T. R. Curris, J. M. Griscom, C. R. Heed, C. Jackson, G. B. Jobson, J. E. Jones, F. O. Lewis, G. W. MacKenzie, L. C. Peter, W. S. Reese, G. O. Ring, H. W. Scarlett, G. E. de Schweinitz, C. E. G. Shannon, B. H. Shuster, W. T. Shoemaker, E. A. Shumway, W. M. Sweet, G. Tucker, W. Zentmayer, Philadelphia.

Schuylkill County Society—G. R. S. Corson, Pottsville; J. J. Dailey, McAdoo; T. L. Williams, Mt. Carmel.

Venango County Society—F. E. Magee, Oil City.

Washington County Society—J. W. McKennan, Washington.

Wyoming County Society—W. B. Beaumont, Laceyville.

York County Society—J. F. Klinedinst, York.

MINUTES OF THE SECTION ON PEDIATRICS

Tuesday, October 3, 1922

First session called to order Tuesday, October 3d, at 2 p. m., by Dr. Henry T. Price, of Pittsburgh, Pa., Chairman, in the Armory, Scranton, Pa. The afternoon program contained the following papers, which were well discussed, and the total attendance at this session was 75.

Address by the Chairman was not discussed.

Dr. Percival Nicholson, of Ardmore, read a paper entitled "Faulty Posture as a Cause of Obscure Digestive and Nutritional Disorders, with a Report of Treatment of Fifty Cases" (Lantern Demonstration). Dr. Horace H. Jenks, of Philadelphia, opened the discussion, which was continued by Dr. J. D. Donnelly, Division of Child Health, Harrisburg; Dr. John F. Sinclair, Philadelphia; Dr. James O. Wallace, Pittsburgh; and Dr. Percival Nicholson, in closing.

Dr. Eben W. Fiske, of Pittsburgh, was unable to read his paper on "Preventable and Correctible Deformities of Childhood" because of his inability to be present on account of illness.

Dr. Walter T. Annon, of Philadelphia, read a paper entitled "Maldevelopment Due to Oro- and Nasopharyngeal Obstruction" (Lantern Demonstration). The discussion was opened by Dr. E. E. Graham, Philadelphia, in the absence of Drs. George B. Wood and Fielding O. Lewis, of Philadelphia. There was no further discussion.

Dr. Stanley Crawford, of Pittsburgh, read a paper entitled "Napkin Eruption of Jacquet" (Lantern Demonstration). The paper was discussed by Dr. Edward P. Corson, Philadelphia, and by Dr. Stanley Crawford, in closing.

Dr. J. P. Crozer Griffith, of Philadelphia, read a paper entitled "Some Acute Abdominal Conditions in Childhood." Dr. Albert F. Hardt, Williamsport, opened the discussion, which was continued by Drs. E. E. Graham, Philadelphia; Aaron S. Cantor, Dickson City, and Dr. J. P. Crozer Griffith, in closing.

Adjourned 4:30 p.m.

Wednesday, October 4, 1922

Second session was called to order Wednesday, October 4th, at 2:05 p.m., by Dr. Price, Chairman, of Pittsburgh.

Dr. Cornelius C. Wholey, Pittsburgh, read a paper entitled "Observations on the Nature of Essential Epilepsy," which was discussed by Drs. George W. Smeltz, Pittsburgh; A. Græme Mitchell, Philadelphia; J. H. W. Rhein, Philadelphia; Percival Nicholson, Ardmore; and Dr. Cornelius C. Wholey, in closing.

The Executive Committee made the following nominations for officers for the coming year: Chairman, J. Claxton Gittings, Philadelphia; Secretary, R. K. Rewalt, Williamsport. On motion, duly made and seconded, the above-named gentlemen were elected officers for the coming year.

Dr. J. H. W. Rhein, Philadelphia, read a paper entitled "Behavior Disorders in Children," which was discussed by Drs. Theodore H. Weisenburg, Philadelphia; E. E. Mayer, Pittsburgh; William N. Bradley, Philadelphia; and John H. W. Rhein, in closing.

A paper entitled "Raynaud's Disease in Children," was presented by Drs. Alfred Hand and John P. Reilly, of Philadelphia, which was discussed by Drs. Ernest L. Kiesel, Scranton; Percival Nicholson, Ardmore; and Alfred Hand and John P. Reilly, in closing.

Dr. Clifford G. Grulee, Chicago, Illinois, read a paper entitled "Diagnosis and Treatment of Pylorospasm in Infancy" (Lantern Demonstration), which was discussed by Drs. Henry T. Price, Pittsburgh; Alfred Hand, Philadelphia; E. E. Graham, Philadelphia; Percival Nicholson, Ardmore; and Clifford G. Grulee, in closing.

Dr. Fred E. Ross, Erie, read a paper entitled "Nervous Manifestations of Rickets," discussion of which was opened by Dr. John F. Sinclair, Philadelphia, in the absence, on account of illness, of Dr. Percival J. Eaton, Pittsburgh. Discussion was closed by Dr. Fred E. Ross.

Dr. Edwin E. Graham, Philadelphia, read a paper entitled "Rickets with Special Reference to Its Etiology and Treatment," which was discussed by Dr. Robert K. Rewalt, Williamsport, and Dr. Edwin E. Graham, in closing.

Adjourned 5:30 p.m. Attendance 84.

Thursday, October 5, 1922

The third session was called to order at 9:20 a.m. by the Chairman of the Section, Dr. Henry T. Price, of Pittsburgh.

The Section went into business session. It was moved, seconded and carried, that the Secretary be instructed to cast a ballot for the election of the officers as nominated by the Executive Committee yesterday.

Dr. Emily P. Bacon, Philadelphia, read a paper entitled "Health and Nutrition Among Pre-School Children," which was discussed by Drs. William N. Bradley, Philadelphia; John F. Sinclair, Philadelphia; J. D. Donnelly, Harrisburg; and Emily P. Bacon, in closing.

Dr. Horace H. Jenks, Philadelphia, read a paper entitled "Medical Care of Dependent Children" (Lantern Demonstration), which was discussed by Drs. William N. Bradley, Philadelphia; Edward L. Bauer, Philadelphia; Percival Nicholson, Ardmore; John F. Sinclair, Philadelphia, and Horace H. Jenks, in closing.

Dr. James K. Everhart, Pittsburgh, read a paper entitled "The Importance of Closer Obstetric and Pediatric Relations," which was discussed by Drs. William N. Bradley, Philadelphia; J. Donald Iams, Pittsburgh; J. L. Foster, Blawnox; George V. Janvier, Lansdowne; Harold R. Mixsell, New York City; Walter S. Brenholtz, Williamsport; and James K. Everhart, in closing.

Dr. Harold R. Mixsell, of New York City, read a paper entitled "Three Years' Experience With Thick-Cereal Feeding in Malnutrition and Allied Conditions in Infancy," which was discussed by Drs. A. Græme Mitchell, Philadelphia; Edward L. Bauer, Philadelphia; Robert K. Rewalt, Williamsport; Percival Nicholson, Ardmore; Clifford G. Grulee, Chicago; and Harold R. Mixsell, in closing.

Dr. Daniel E. Berney, Scranton, was to read a paper entitled "Observations on Infant Feeding from the Vienna and Berlin Clinics," but the Chairman announced that Dr. Berney had not returned to this country.

Dr. J. Donald Iams, Pittsburgh, read a paper entitled "Nasal Diphtheria," which was discussed by Drs. E. L. Bauer, Philadelphia, and J. Donald Iams, in closing.

Adjourned at 12:10 p.m. Attendance 65.

MEMBERS REGISTERED IN SECTION ON PEDIATRICS

Allegheny County Society—S. Crawford, J. K. Everhart, J. D. Iams, H. T. Price, G. W. Smeltz, C. C. Wholey, Pittsburgh.

Cambria County Society—H. J. Cartin, Johnstown.

Erie County Society—F. E. Ross, Erie.

Lackawanna County Society—R. N. Mackey, Clarks Summit; W. W. Myer, Old Forge; J. Wahl, Pittston; L. H. Gibbs, L. C. Kennedy, Scranton.

Lancaster County Society—H. B. Roop, Columbia; W. J. Leaman, Leaman Place; C. H. Witmer, Lancaster.

Lebanon County Society—J. D. Kerr, Lebanon.

Lehigh County Society—F. R. Bausch, M. Kemp, Allentown.

Luzerne County Society—A. Dattner, E. L. Myers, C. H. Miner, Wilkes-Barre.

Lycoming County Society—R. K. Rewalt, Williamsport.

Montgomery County Society—P. Nicholas, Ardmore; H. A. Bostock, Norristown.

McKean County Society—J. D. Donnelly, Harrisburg.

Northampton County Society—H. O. Rohrbach, Bethlehem.

Philadelphia County Society—W. T. Annon, E. P. Bacon, E. L. Bauer, P. B. Cassidy, E. L. Graf, E. E. Graham, A. J. Hand, F. Janvier, H. H. Jenks, A. G. Mitchell, J. H. W. Rhein, J. F. Sinclair, H. S. Snyderman, J. P. C. Griffith, Philadelphia.

Washington County Society—C. C. Cracraft, Claysville.

MEMBERS REGISTERED; SECTION NOT DESIGNATED

Allegheny County Society—A. J. Bruecken, T. Diller, H. C. Westervelt, P. I. Zeedick, Pittsburgh.

Berks County Society—F. W. Frankhauser, Reading; F. P. Lytle, Birdsboro.

Blair County Society—T. L. Wilson, Bellwood.

Bradford County Society—P. N. Barker, Troy; W. T. Harshberger, New Albany.

Crawford County Society—W. W. Shaffer, Meadville.

Columbia County Society—J. S. John, Bloomsburg.

Dauphin County Society—J. L. Lenker, Harrisburg; H. C. Myers, Steelton.

Elk County Society—J. E. Madara, St. Marys.

Lackawanna County Society—T. Monie, Archbald; T. A. Rutherford, Clarks Summit; H. E. Jones, Dickson City; F. L. Murphy, Dunmore; S. S. Watson, Moosic; W. H. Conway, R. J. Lloyd, Olyphant; F. F. Arndt, J. J. Barder, C. G. Brown, F. G. Bryant, G. J. Berlinghof, M. A. Carroll, G. A. Clark, F. W. Davis, J. P. Donohoe, C. Falkowsky, Jr., W. G. Fulton, H. Goodfriend, L. M. Gates, P. F. Kerstetter, E. P. Larkin, P. C. Manley, L. A. Milkman, P. F. Moylan, T. B. Rodman, J. J. Sullivan, Sr., M. J. Williams, Scranton; A. E. Hager, J. W. Houser, Taylor.

Lehigh County Society—T. L. Smyth, Allentown.

Luzerne County Society—J. P. Dougherty, Ashley; A. J. Baker, Duryea; T. H. Mays, Freeland; W. F. Davison, S. A. Ruffner, F. D. Thomas, Kingston; E. G. Heyer, J. A. Hugo, Nanticoke; J. M. Nealon, Olyphant; J. R. Beaver, M. C. Gaughan, W. L. Hartman, Pittston; C. F. Netzel, Plymouth; W. J. Davis, C. H. Ernst, P. P. Mayock, S. P. Mengel, A. H. Morgan, L. A. Sheridan, W. S. Stewart, L. M. Stoerkel, A. Trapold, D. P. Wetherby, Wilkes-Barre.

Lycoming County Society—T. K. Wood, Muncy; C. M. Adams, W. E. Glosser, C. J. Cummings, Williamsport.

Montgomery County Society—E. F. Corson, Cynwyd.

Montour County Society—C. E. Ervin, Danville; J. E. Robbins, Wernersville.

Northampton County Society—E. E. Bush, Danielsville; R. A. Fisher, Easton.

Northumberland County Society—L. R. Rank, Milton; L. M. Holt, G. W. Reese, Shamokin.

Philadelphia County Society—J. Babitt, R. A. Bogia, M. H. Bradley, M. S. Ersner, J. B. Lownes, A. Randall, R. F. Ridpath, J. C. Rommel, T. C. Stellwagen, J. R. Wells, Philadelphia.

Schuylkill County Society—G. O. O. Santee, Cressona.

Somerset County Society—C. P. Large, Meyersdale.

Sullivan County Society—M. E. Herrmann, Dushore.

Wayne County Society—H. C. White, Ariel; A. M. Cook, South Canaan.

GUESTS

Blinn A. Buell, Binghamton, N. Y.; Dana Fletcher Downing, New York, N. Y.; W. G. Drouin, Holyoke, Mass.; I. Bertram Kronenberg, Baltimore, Md.; Mary L. Jennings, Geneva, Ontario; William H. McCormick, Perth Amboy, N. J.; George C. McElfatrick, Wilmington, Del.; S. D. Molyneaux, Binghamton, N. Y.; David Marine, New York City, N. Y.; Bernard S. Oppenheimer, New York City, N. Y.; P. H. Shaw, Binghamton, N. Y.; Olin West, Chicago, Ill.; Walter D. Dandy, Baltimore, Md.; Clifford G. Grulee, Chicago, Ill.; Harold R. Mixsell, New York City; Wells Eagleton, Newark, N. J.; Harry Peyton Mosher, Boston, Mass.; Sydney R. Miller, Baltimore.

BOOKS RECEIVED

Transactions of the College of Physicians of Philadelphia, Third Series, Forty-Third Volume. Philadelphia, 1921.

A Practical Medical Dictionary of words used in medicine with their derivation and pronunciation, including dental, veterinary, chemical, botanical, electrical, life insurance and other special terms; anatomical tables of the titles in general use, and those sanctioned by the Basle Anatomical Convention; pharmaceutical preparations, official in the U. S. and British Pharmacopœias and contained in the National Formulary; chemical and therapeutic information as to mineral springs of America and Europe, and comprehensive lists of synonyms. By Thomas Lathrop Stedman, A.M., M.D., Editor of the "Twentieth Century Practice of Medicine" and of the "Reference Handbook of the Medical Sciences." Seventh, Revised Edition, illustrated. New York: William Wood and Company, 1922. Price $7.00 net.

Proceedings of the Connecticut State Medical Society, 1922. One Hundred and Thirtieth Annual Convention held at Bridgeport, May 17 and 18, 1922. Charles Williams Comfort, Jr., Editor. Published by the Society. Printed September, 1922.

The Medical Record Visiting List published in sizes to cover 30, 60 or 90 patients per week, price $1.75, $2.00 and $2.50. The record pages are not dated for any specific year, making it possible to commence the diary at any time. Publishers: William Wood and Company, New York.

The Elements of Scientific Psychology, by Knight Dunlap, Professor of Experimental Psychology in the Johns Hopkins University, Baltimore. Illustrated. St. Louis: C. V. Mosby Company, 1922. Price $3.50.

BOOK REVIEWS

PRINCIPLES AND PRACTICE OF X-RAY TECHNIQUE FOR DIAGNOSIS, by John A. Metzger, M.D., Roentgenologist to the School for Graduates of Medicine, Medical Department, University of California, Southern Division, Los Angeles, with 61 illustrations. Published by The C. V. Mosby Co., St. Louis, Mo. Price $2.75.

This is a comparatively small book of 144 pages, well printed, on good paper and with good photographic illustrations, showing the author's technique for x-ray diagnosis. The general principles governing the technique are described in general terms. There is no attempt made to compare the technique used by others, nor does the size of the book permit a thorough discussion of any branch of the subject or of any particular examination. The book will serve as a general review of the subject, but must be supplemented by information obtained from other sources in order to do really satisfactory work. G. E. P.

OBSTETRICS FOR NURSES. By Joseph B. DeLee, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (6th) Edition, entirely reset. 12mo of 525 pages, with 245 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth $3.00 net.

In view of the many years the author has been a lecturer to nurses, and a recognized authority on obstetrics, it is little wonder that this, the sixth edition, appears in what might be said "the last word in obstetric nursing." The medical student and the practitioner should have a copy of this edition at his right hand, as it contains innumerable matters of extreme value in applied obstetrics that will prove of inestimable value when put in practical use in the lying-in-room, whether it be in a hospital or at home. The book devotes special attention to nursing at home and nursing in the hospital. This book is recommended to every nurse, who should have a copy in her "bag," as it will help her out of many tight places, and safeguard the interests of the mother and the baby, and indirectly the physician. The chapter on infant feeding will be welcomed by the nurse. The appendix contains a very good article of value to the visiting nurse in obstetric practice, a dietary, and other very valuable references. The lecturers on obstetric nursing in the various training schools for nursing would do well to use this book as their guide and for a textbook.

F. C. H.

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ADDRESS

A DOCTOR OF THE OLD SCHOOL*

E. J. G. BEARDSLEY, M.D.
PHILADELPHIA

There is a time-honored custom that the formal program of the Section on Medicine shall be inaugurated by an address by the Chairman. It has seemed to the present incumbent not only appropriate but imperative that the allotted time be used on this occasion to direct special attention to the great loss sustained by this Section in the passing of the senior member of its Executive Committee, M. Howard Fussell, of Philadelphia.

Dr. Fussell's untimely death, at 66 years of age, not only deprives our Section and the parent Society of one of its natural and most trusted leaders, but his passing causes our profession to lose one of its noblest as well as one of its most skilled practitioners. So recently has Dr. Fussell occupied and graced the position of Chairman of this Section that his unanticipated death, on October 15, 1921, brings to many of us a very intimate sense of personal loss. Those who attended the Philadelphia meeting, one brief year ago, will remember with pleasure, mingled with sadness, the characteristic discussion by Dr. Fussell in connection with the paper on Goiter by Dr. Irvin, of Danville.

Who that ever came in contact with Dr. Fussell can forget his sturdy Rooseveltian traits of body and mind. How much and how sadly we shall miss his vivid and invigorating personality! We shall always remember the twinkling kindly eyes that peered from beneath those shaggy eyebrows, the sincere and heart-warming smile that the bushy mustache failed to conceal, the friendly chuckle and merry laugh and the stimulating and encouraging pat on the shoulder. So rare are natures like Dr. Fussell's that one is doubly fortunate to have known and loved him. There will be few physicians in our state who will differ with the statement that in Pennsylvania with its eleven thousand and more licensed practitioners there was not one more respected, more admired and more loved than was M. Howard Fussell.

Can we, who gather together with the hope and for the express purpose of attempting to make ourselves better doctors, use to greater advantage this portion of our program than by making ourselves familiar with the life and personal traits of this much beloved physician?

Had the speaker been asked, at any time during recent years, to name the best general practitioner of medicine in Philadelphia and its vicinity he would unhesitatingly have named Dr. Fussell. Had a questionnaire of similar import been issued to a large number of well-informed medical men throughout the state it is the speaker's opinion that Dr. Fussell's name would have been mentioned more often than any other. Not only was this physician recognized as one of the outstanding figures among the best general practitioners of our state but he has, of recent years, been far more widely known as a specialist in diagnosis and treatment and, as a result of this well-deserved reputation, he became the favored consultant over a wide and ever extending territory.

Time does not permit that we should here give more than the briefest survey of Dr. Fussell's charactertistics, activities and accomplishments, but there is, however, a lesson and an inspiration for each of us in even a casual study of his useful life.

From an admirable memorial sketch, written by Dr. David Riesman, we learn that the ancestors of Dr. Fussell were of the English branch of the Society of Friends and that they emigrated from England in 1704 to join William Penn's courageous settlers in Philadelphia. Dr. Fussell's forefathers lived in Philadelphia, Chester and Delaware Counties, and a number of his paternal relatives were distinguished members of the profession that he was to adopt for his life work.

M. Howard Fussell was born on Nov. 24, 1855, at Belvedere, now known as Whitford, near Downingtown, in Chester County. He inherited in abundance those qualities that are most essential for the development of a happy, useful and successful life. Nature endowed him with an exceptionally robust body and with a rugged constitution that could and did resist both disease and the fatigue incident to a life crowded with arduous professional duties. He possessed a happy, optimistic temperament, a joyous and even disposition, a generous and thoroughly unselfish nature. His aims and ideals were always characterized by extreme simplicity and splendid nobility.

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*The Chairman's Address, delivered before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

As a youth Dr. Fussell was fortunate in being compelled by circumstances to make his own way in the world. The very difficulties that it was necessary to overcome served to develop and intensify those sterling qualities that make for a splendid character and for ideal citizenship. His parents and relatives were not in a position to aid him financially to acquire an advanced education but they thoroughly sympathized with his desire for a scientific education and encouraged him to strive for the object that he had set his heart upon.

Young Fussell attended the public schools at Berwyn and Wayne, and later entered the Friend's Central School in Philadelphia. He was distinguished at this period of his life by the same lovable characteristics that later marked him as a most unusual man. He was a little more considerate for those less fortunate than himself, a little kinder in thought and deed, a little less interested in himself than in self-training for usefulness than is the usual youth.

It had long been the highest ambition of his life to become a physician. To realize this desire there was an urgent need for money. During the evenings, on holidays and in the vacation periods this sturdy, self-respecting and ambitious youth sought and obtained any employment available to him in order that he might make and save money for the expenditures that a medical education necessitated. When no work was to be obtained this would-be medical student devoted his spare moments to the study of subjects required in the preparation for a course in the school of medicine. He familiarized himself with Greek and Latin by hard and consistent study and interested himself by experiments in chemistry and physics. To one of his observing nature the long walks in the country, frequently required by his varied employment, gave him the opportunity of making a practical study of botany. He became intensely interested in the subject and as a result of this interest collected a herbarium of the native flowers that was a model of completeness and skill in arrangement. During all his later life his continued interest in, and expert knowledge of botany proved to be a most healthful and refreshing relaxation and was not only a real joy to him but a source of surprise and pleasure to those who accompanied him on his frequent professional trips to the country.

In the autumn of 1875, M. Howard Fussell was enrolled as a first year medical student in the University of Pennsylvania, this act fulfilling the splendid dream of his youthful days. After a college term of stimulating and enjoyable work, into the spirit of which he entered with his whole heart, the student found that the fund of hard-earned and carefully hoarded money was exhausted and that he would not be able to earn enough during the summer vacation to resume work as a student in the autumn. Bearing the keen disappointment without bitterness or resentment, and never for a moment abandoning his plan for a professional career, young Fussell temporarily renounced the study of medicine, and with real talent and unusual ability taught school for five years in Radnor. During this period he tutored during the evenings, working when opportunities presented, but continuing his medical reading and studying in the intervals when his time could not command a money value. During these years of teaching it was Fussell's habit to rise at 5 a. m., study a subject connected with medical science until the breakfast hour, and then cheerfully assume his position of instructor of the youth in the public school.

At this period he so systematized his life and work that he accomplished far more than he otherwise could have done, and later, he similarly planned his professional life and work so that no matter how busy he might be emergencies found him prepared to use the time set aside as reserve. His long experience in the classroom as teacher was to prove excellent training for his future work as a medical instructor.

It is pleasant and gratifying to know that during this extremely busy period of the young medical student's life he found time to fall deeply in love. Perhaps it may be more truthfully stated that he awakened to the knowledge that a long treasured friendship for a girl companion of his youth had ripened into love. Firm and unyielding as had previously been the student teacher's custom to allow nothing to interfere with his carefully planned studies we now find him abandoning all thought of work on Saturdays and, like the normal-minded young man that he was, spending his money freely for sweets and books and walking from Radnor to Phœnixville, a distance of twelve miles, to present them to the girl of his choice. To this lovely young woman who had been his friend and companion from his youth and who, later and under tragic and romantic circumstances, became his wife, he opened his heart and freely talked of his plans and aspirations. Strangely enough young

Fussell used almost the same words that another great American, whom he later came to resemble in body as well as in traits of character, used in expressing his desire to "make things better in the world, even a little better, because he had lived in it." Fussell's unselfish ambition and hope had long before been well expressed by the poet when he wrote:

> "Live thy life well, live it nobly,
> Do the good that thee can do.
> If no heaven, thee has had thine;
> If there be, thou shalt have two."

In 1881, having saved a sufficient sum of money for the initial expenses, Fussell again entered the medical school. Five years had elapsed since he had temporarily withdrawn from the medical course and he wisely elected to repeat the first year's work in order that he might build his education in the medical sciences upon a secure foundation of proper preparation. He not only enjoyed a thorough course of medical instruction during his four years in the medical school but, equally important, he made friendships with fellow students, as well as with his teachers, that endured and that grew more precious as the years passed. Dr. Fussell's class graduated in 1884, but because of a very serious illness he was not able to be present at the graduating exercises. During the period that elapsed after completing his final examinations and before commencement, Fussell developed a very severe attack of peritonitis and his life was despaired of. Although unrecognized as such in 1884, it is probable that his illness would now be diagnosed as an acute inflammation of the vermiform appendix and quite different treatment instituted than was adopted at that period.

The illness was so severe that the patient realized that his attending physician and the consultant feared the outcome. Thinking that he was doomed to die the patient requested that he be united in marriage to the charming young woman with whom he had been many years in love.

The influence of a good woman's love is always wonderful and is frequently amazing in its results for good. Dr. Fussell's marriage was thought to have been performed with the shadow of death present, but following the impressive ceremony the patient's condition materially improved and recovery followed in a few weeks.

Soon after the marriage a close relative, a young mother, died, leaving two young children, and Dr. Fussell and his courageous bride took to their home the bereaved husband and the motherless children. Having thus assumed the responsibility for this adopted family Dr. Fussell did not feel that he could afford to take a hospital interneship, but instead he firmly resolved that he would make up for this deficiency in his medical training by adopting other professional activities in connection with hospital work.

Dr. Fussell determined to establish a home and office in Manayunk, an obscure suburb located in an isolated section of the city. His choice of location was in the remotest and most inaccessible part of Philadelphia, a place of steep, forbidding hills and difficult distances. Manayunk was populated in the greater part by the humblest of people, most of whom were employed at low wages in the mills of that section. To any one who did not know Dr. Fussell, this choice of location would have been thought to prove a very serious handicap for any future progress in his profession. Even to many of his friends such a move in the beginning of his career as a physician seemed, of necessity, to limit him to an extremely restricted and local success as a practitioner of medicine. Men of so unique and heroic a mould as Dr. Fussell, however, are a law unto themselves. Such forceful characters, by the very vigor of their determined personalities, wring from unfavorable surroundings, seemingly unsurmountable obstacles and depressing conditions an inspiring success. The day that Dr. Fussell opened his office he was consulted by a patient, the next day two appeared, and on the following day four patients sought his advice.

Almost at once the young practitioner was a success. Patients came to him because they seemed to recognize the admirable qualities of the man as well as the trustworthy traits of the physician. From the beginning he gave his very best efforts in behalf of those who consulted him. It was not the custom in Manayunk to make physical examinations of patients prior to the advent of this new practitioner and his patients were surprised to learn that they were to be thoroughly examined prior to receiving any treatment for the symptoms that they complained of. Few general practitioners, at this period, realized the practical importance of, and fewer still made use of, the simple laboratory tests that could be applied at the bedside or in the office. Dr. Fussell gave to his patients not only the benefit of careful, painstaking physical examinations but he also made such laboratory tests as would aid in the better understanding of the condition being studied.

To carry out laboratory procedures when one has access to a well-equipped laboratory is not difficult, but to requisition a portion of the family bathroom, as Dr. Fussell did, to enable him to make laboratory investigations, takes a determination and persistence that all must admire. For many years there was no running water in the makeshift laboratory and an alcohol lamp supplied the flame for the necessary tests; but in spite of these and other inconveniences Dr. Fussell examined blood and urine, throat smears and cultures as a matter of daily routine. He was one of the first practitioners in Philadelphia to make practical use of the blood-counting apparatus, and many were the hours that he spent in searching blood smears for malarial organisms, making blood counts and doing such important laboratory work as proved useful to him as a general practitioner of medicine.

For many years Dr. Fussell was in the habit of carrying in his "old black bag" the necessary apparatus, including a microscope, for examining blood, urine and spinal fluid. When called in consultation he was prepared not only to give his highly valued opinion concerning the nature of the disease but he also offered to aid in confirming such an opinion by performing the necessary laboratory tests at the bedside. He was not the type of consultant who would order a leucocyte count upon a patient remote from a laboratory and a microscope, but he would make the leucocyte count himself as skillfully and as quickly as a trained laboratory worker could do.

It is needless to point out that Dr. Fussell was very soon recognized as a busy, talented and progressive physician. How human and how natural it would have been for any ordinary practitioner of medicine to have contented himself with the pleasing outlook of a rapidly increasing practice and a respected position in his environment! But how unlike the nature of M. Howard Fussell such a course would have been. No sooner had he established himself in practice than his thoughts turned to plans for continuing and improving his medical education. In the autumn of 1884, the year of his graduation, he attached himself to the staff of the medical dispensary of the Hospital of the University of Pennsylvania. He worked daily at the dispensary and gave to each patient there seen the same conscientious care that his private patients enjoyed. His dependability as well as his recognized ability caused him to be promoted to the position of Chief Clinical Assistant at the dispensary, a position that he filled with credit and distinction for many years. When it is remembered that Dr. Fussell's home in Manayunk was seven miles from the University Hospital and that the only practical modes of conveyance were the horse-drawn carriage or the saddle horse, one can visualize at what a sacrifice of time, money and ease the religiously-kept appointment at the hospital was fulfilled.

Dr. Fussell's work at the hospital brought him into intimate contact with the elder Pepper, James Tyson and John Musser, and these men stimulated his desire for increased knowledge in scientific medicine. The greatest stimulus to his work in medicine, however, came with the arrival of that master teacher, William Osler, to the medical school of the University. From 1885 to 1889 Doctor Fussell enjoyed the happy privilege of serving as the assistant to Doctor Osler in the medical dispensary. Professor Osler recognized at once the native ability of his assistant and showed a sincere interest in his development as a clinician. Osler also interested himself in seeing that Dr. Fussell's faithful and talented services to the hospital were acknowledged, and suggested that Dr. Fussell be given an opportunity to become a teacher in the medical school. Professor Osler's personality and example as well as his encouragement and friendly advice had a profound influence upon the life of Dr. Fussell, as it had upon all the men in whom Professor Osler interested himself.

For twenty-five years Dr. Fussell lived and practiced general medicine at the original location in Manayunk among people who possessed little means and few luxuries. During all this time Dr. Fussell gave to his patients as good medical services as were to be had anywhere at any price. His customary office fee was fifty cents and his charge for visiting a home was usually one dollar. That he charged insufficient fees all his professional life is true and it is debatable whether his policy of charging too little for his services was a wise one but, be that as it may, it is certainly refreshing and inspiring to know that there was such a member of our profession who gave his best services to all who consulted him without thought of financial reward. We who are forced, through no particular desire on our part, to appear to be infected with a mania for money-getting, cannot but wish in our hearts that it were possible and practical for us to view the profession of medicine in the ideal way that Dr. Fussell did.

Osler's influence and interested advice started Fussell to teach medical students. His reputation as a medical teacher is now well known. He will live in the memory of the men whom he taught as one of the most earnest, conscientious and helpful of teachers. His methods of instruction were not spectacular but they were efficient and effective. As a teacher he was systematic, thorough and practical, and his great experience in general practice made him an invaluable asset to a medical school. His devotion to his work with the students and the sacrifices that he made that he might aid them will never be known, except to the few that were intimately acquainted with his life and work.

Dr. Samuel McC. Hamill has written intimately and beautifully of Dr. Fussell's life in the *Alumni Register* for December, 1921, the publication of the University of Pennsylvania, and in his article one glimpses the human qualities as well as the greatness of the man.

An associate, Dr. Robert L. Pitfield, who knew Dr. Fussell well, writes that it was impossible to have known the man without admiring and loving him. He knew Dr. Fussell on more than one occasion to make two trips a day to the University Hospital, when he was as busy as a man could well be with his own practice, in order that he might be of service in the dispensary and aid the students in the ward classes. Twenty-eight miles of travel at a great sacrifice to accomplish a prosaic duty! What a man!

Is it strange that the students and internes loved him? He was affectionately termed "Daddy Fussell" by those men who came into intimate contact with him, and as the years went by he became "Daddy Fussell" to the group of younger medical men of the city. No man, unless it was Professor Osler, whose stay in Philadelphia was all too short, has had such an influence for good among the medical men of Philadelphia. Selfishness, self-interest and egotism are traits common to human nature and not unknown in members of the medical profession. Dr. Fussell was untainted by such traits. He was, in fact, so free from unpleasant characteristics that he seemed a man and a physician set apart.

The passing years brought more and more work to Doctor Fussell. His practice was enormous and, although he always had excellent and well-trained younger men associated with him, the patients would willingly wait many hours in order to insure being seen by Dr. Fussell. He gave them the confidence that every sick person needs. He was kind, thorough and really interested not only in their illness but in them. His presence in a sick room was like a ray of sunshine and the healing influence of his cheery visit lasted long after his physical presence had departed from an invalid's room. That his patients loved him no one will doubt, and one can sympathize with the old lady patient at the dispensary who exclaimed that "there was more healing virtue in Dr. Fussell's old coat than in all the great doctors of the city."

Dr. Fussell once told Dr. Robert Pitfield, as a good joke upon himself, that he had sat up all night with a poor asthmatic patient who, by lamp light, seemed much cyanosed, only to discover in the morning that the patient suffered from argyria and the color was uninfluenced by the attack of asthma. How many physicians would have spent their night in a lowly home without hope of material reward unless there were graver symptoms than a moderate cyanosis? Could the truth be known of the thousands of self-sacrificing acts that Dr. Fussell performed so naturally and so unostentatiously each year we would find that Manayunk and Roxborough possessed for twenty-five years a prototype of "The Doctor of the Old School" in very truth.

Dr. Fussell was a great deal more than an excellent, well-trained physician. He was an organizer of real ability. He was largely influential in the establishment of St. Timothy's Hospital in Roxborough and served as Chief of Staff for many years. He established the pathological laboratory in this hospital and, by his active and practical interest in pathological work, interested the staff in the continued success and growth of this department.

Dr. Fussell was actively interested in four hospitals: St. Timothy's, St. Mary's, The Episcopal Hospital, and the Hospital of the University of Pennsylvania. Not a man on any service gave more time or thought to his duties or was more faithful in their performance. His extreme thoughtfulness and kindness to the ward patients characterized all his services. He seemed to be able to visualize what his own reactions would be were he a ward patient, and he daily practiced the Golden Rule in his work. His affection, pride and real interest in the development, progress and welfare of the internes and nurses who served with him was sincere and whole-hearted. He showed them many courtesies and encouraged them to do their best work by example rather than by precept.

It was Dr. Fussell's custom to devote much more time to his ward rounds than to the private room services and, if in the rush of the day's work, any patient had occasion to feel slighted, it was a private patient. It was usual for the entire staff of internes, when duties allowed, to make rounds with "Daddy Fussell." The internes and nurses loved him and were not ashamed to show their affection. Dr. Fussell's home was a "Friendly Inn" to many a homesick medical student and hospital interne, and his latchstring was always out for medical men, young or old, who wished to talk matters over with him. It would be interesting to know how many rough places were made smoother and how many difficult life problems were successfully attacked after a heart-to-heart conference with "Daddy Fussell."

Dr. Fussell's affection for the medical profession was proverbial. Next to the love for his wife and children the interest of the medical profession and its members came close to his heart. He was actively interested in nearly all the medical societies of Philadelphia, and delighted in the friendly associations that these gatherings afforded. He organized a medical society in his own ward and by getting the members together aided in dispelling little antagonisms and differences of opinion that, not infrequently, grow into feuds if less diplomatically treated. It is a significant fact that Dr. Fussell had no enemies. He was a positive character and another man might not always agree with him but no one could doubt his integrity and sincerity.

It is amazing how much medical literature came from the pen of Dr. Fussell that was instructive, interesting and inspiring. His presentations at the societies were many and they were always practical and helpful. Many will remember with amusement Dr. Fussell's frequent appearance at the Pathological Society with the pockets of his familiar, time-worn old overcoat bulging with interesting specimens. He was ever a searcher after truth. He tried to aid the patient in every way in his power while the patient lived, but if the patient died it was a part of Dr. Fussell's medical religion to make a determined effort to secure an autopsy for the good that might result to his profession and to the world. He once said that "clinical medicine can only advance in a big way if we can learn our mistakes." It makes one ashamed of his own lack of zeal for the truth when one remembers that Dr. Fussell performed many autopsies under poor conditions, late at night, and after a strenuous day of fatiguing practice. How Dr. Fussell managed to keep abreast of the medical literature of the day was a mystery to many who knew of his large and exacting practice. The secret was that he rose at 5 a. m., as in his youth, and went to bed long after his household was asleep. He read late and abstracted the articles that interested him. His contributions to literature were all written after his day of general practice was completed.

He was elected to membership in the Association of American Physicians. In electing this talented general practitioner to fellowship in that select body the Association honored itself as well as the man they chose.

Dr. Fussell was much sought after to address medical societies and his name upon the program was sufficient attraction to insure a well attended meeting. He never addressed a meeting unless he had something practical and worth while to say. It was often said of him that an audience that heard him speak went to their homes better doctors and that as a result of his talk they were always firmly resolved to improve their methods of work.

As the years passed and Dr. Fussell's family increased in size it became necessary to move into a larger home. A site was chosen in Roxborough, an adjoining suburb. During the twenty-five years of useful life and work in Manayunk Dr. Fussell and his devoted wife not only brought up and educated their own four children but adopted into their hearts and home four other children, intimate relatives, whose mothers had died. A happier, more delightful home could not have been found in this land. Dr. Fussell was an ideal family man. Busy as his life was, he did not allow his profession to interfere with his duties as a father and husband. In the days of horse-driven vehicles a portion of the family drove with him night and day for company, and when the automobile came there were other pleasurable plans for the delight of the entire family group. There was just as much happiness and satisfaction in the days when frugal living was essential as in the later days when luxuries were to be had. The Sunday afternoon excursions with a basket picnic accompaniment were a feature of the family life that will be remembered with satisfaction and pleasure by all those who were fortunate enough to have been included.

Dr. Fussell did not reach his exalted position in medicine in haste. With his ever increasing reputation as a clinician he advanced slowly but surely in official rank as a teacher. No appointment to a full professorship was ever more popular than was Dr. Fussell's election to the chair of Applied Therapeutics at the University of Pennsylvania. He was eminently qualified for the place by every test. He had been acknowledged to be an exceptional general practitioner for many years, he was a clear and forceful writer and a lecturer and teacher of great ability and unusual charm. His lectures were carefully prepared and were delivered with that pleasing emphasis that is characteristic of forceful natures. He taught what drugs could do in disease but he equally emphatically pointed out what they should not be expected to do. He taught that the enthusiastic therapist should spend much time in observing "living pathology" in the operating room and that he should not fail to witness autopsies at every opportunity. He constantly pointed out the necessity for preventive measures in medicine rather than thoughtless and careless therapy. Like all great teachers of therapeutics he emphasized the dangers of administering drugs that could do no good and might do harm.

With his elevation to a faculty position in his Alma Mater came an increase in his consulting work which had been slowly growing in volume for many years. It became necessary for him to have an office in the city. He had long been urged to make such a move for the convenience of his city patients but he had resisted the plan for the reason that it would prevent his continuing to act as family physician to his many devoted and faithful patients. He did, at last, consent to have a central office, and for a few weeks before the public became acquainted with this fact Dr. Fussell had a little time to read and write during his office hours, and he admitted that the relaxation was enjoyable. Soon, however, he became as busy in his city office as such a man is bound to be and there was as little leisure in the city office as in his long-established office in Roxborough.

Dr. Fussell was an ideal consultant. His first and only thought seemed to be concerned with how he could be most useful to physician and patient. He listened patiently and attentively to the physician's statement regarding the illness, and then quietly and briefly questioned the patient, made his physical examination and expressed his opinion. He did not pretend to be above making mistakes but "tried not to make the same one twice." He was anxious to learn from every physician he encountered and frequently frankly stated that his first impression regarding a patient's illness had been incorrect and that the family physician had been entirely right in his diagnosis of the case.

Sincere, thorough and absolutely honest, self-effacing and the very embodiment of the spirit of generosity. What a man! What a noble life! When shall we see his like again?

When the World War came, although Dr. Fussell was over sixty years of age and could with good faith have advanced excellent reasons why he should remain at home, he honored the uniform of a captain in the medical corps of the army by wearing it. Had every camp of this country been fortunate enough to have a man of Dr. Fussell's character, experience and scientific knowledge upon its examining boards, especially early in the war, how much more efficiently the medico-military machinery would have run! Doctor Fussell served his country as faithfully and as cheerfully as he had served his patients all his professional life, and, as would be expected of such a man he made scores of firm friends during his experience in the army.

It was during his period of army service that Dr. Fussell suffered his first attack of angina pectoris. It seems the irony of fate that he, who knew so well the characteristics of that dread symptom, should experience its sickening pangs. No man was in a better position to visualize what the future held for him than this experienced physician, but his heart and his feet never faltered. For five years before his death he lived with the spectre of death ever with him, but he knew no fear. Cheerfully he did his day's work, gayly he planned pleasures for his family and friends and silently he hid from those he loved the knowledge that his time for departure was near. It has been said that a brave man dies but once, and that all his life is a preparation for the inevitable end. So it was with Dr. Fussell. Not for him was the restricted existence of a pampered invalid. He continued to live his life to the full in the service of others. He died suddenly in an attack of angina while on the train between Lock Haven and Williamsport, where he had been in consultation in an attempt to save the life of another.

We seldom appreciate our great men as they deserve while we have them with us. We are all too busily engaged in our own little projects. Death is a rude awakener of our sense of appreciation of the nobility of characters that we, so frequently, take for granted. So it was in the case of Dr. Fussell. His friends loved and appreciated him but not to the extent that he deserved until his physical presence was taken from them forever. Then it was that it came to each man who had known Dr. Fussell well to realize just what his absence from our daily lives meant.

The funeral of this noble physician revealed a little of what position he occupied in the medical profession, as well as what his life meant to his neighbors, patients and friends. Into that formerly joyous and happy home on this sad occasion silently filed a grieving multitude. Every heart was heavy with the saddening realization that no more would be heard that kindly voice, that gay laugh or happy shout of greeting. The rich and powerful and the poor and humble commingled in that gathering and all were touched with the same sense of irreparable loss. No man ever had more sincere mourners and no man better deserved the tributes paid.

Dr. Fussell has passed on to his reward but the inspiration of his unselfish life devoted to the service of others will abide with us and make us better men. What could be a more fitting memorial for a man who loved the medical profession as Dr. Fussell did than a concerted effort of the members of this Society to make themselves better physicians because of the lifelong example of professional skill, integrity and unselfishness that Dr. Fussell exemplified

The words of Oliver Wendell Holmes, quoted by Dr. Fussell's classmate, Dr. Hobart A. Hare, at the unveiling of Dr. Fussell's portrait at the Medical Laboratories of the University of Pennsylvania are those that best apply to the life of this great and lovable physician!

"A whiter soul, a fairer mind,
A life of purer course or aim,
A gentler smile, a voice more kind,
We cannot hope on earth to find.
The love that lingers o'er his name
Is more than fame."

ORIGINAL ARTICLES

CONCERNING UNIVERSITY EXTENSION POSTGRADUATE MEDICAL WORK*

GEORGE H. MEEKER
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PHILADELPHIA

At this time there appears to be no need for arguments in advocacy of the establishment of American University extension postgraduate medical courses. Many convincing pleas looking toward this end already have been made in medical society meetings, reported in the medical and lay press, and have met with hearty general approval.

It is the purpose herein to make clear what has actually been brought into effect in the field, to consider certain practical aspects thereof, and to indicate the nature of the initial organized steps in Pennsylvania.

It may be said at once that nothing of a truly comprehensive, systematic and relatively final character has been accomplished anywhere. On the other hand, earnest and promising efforts have appeared in a very few localities; and in one of these at least the work has grown to considerable magnitude. The experiences gained by such local efforts are certain to yield such good solutions of the general problem that one may reasonably expect a widespread and well organized development to occur within the next decade. Conditions are favorable for an early beginning in Pennsylvania.

With a view of ascertaining the present situation throughout the country, the writer has recently made, by mail, inquiries of the deans of all "Class A" medical colleges. Only four make report of any efforts in the premises: to wit, the Universities of Buffalo, Maryland, North Carolina, and Wisconsin.

In the University of Buffalo, the evening lectures of the regular undergraduate courses are open to all physicians.

The dean of the Medical Department of the University of Maryland writes: "We are endeavoring to reach the various counties of the state and the members of the county societies. We have had a large number of meetings in which members of the teaching staff of the Medical Department have endeavored to be as useful as possible to the rural districts to help in the matter of hygiene and preventive medicine, prenatal and obstetrical care, early feeding of children, the early diagnosis of cancer, recognition and prevention of contagious diseases, the earlier methods of diagnosis and simpler laboratory examinations. We believe it is bearing fruit and will be of great benefit to the state."

The dean of the Medical Department of the University of North Carolina reports that in 1916 they gave, under two specially detailed teachers, two courses in pediatrics, to six groups of physicians in the western section and six groups in the eastern section of the state. The groups were composed of fifteen to twenty physicians in each of six towns, so situated that the lecturer could go easily from one town to the other and give a lecture and hold a clinic one day each week for twelve weeks. Each subscribing physician paid about thirty dollars. The plan was revived in the summer of 1922 with the offer of two courses in internal medicine. The dean says further: "I believe we are meeting with measurable success."

The work being done by the University of Wisconsin is set forth in a series of printed and mimeographed circulars. The work is a part of that broad plan of university extension which may justly be called "the Wisconsin idea," and which, to quote their "Bulletin 1090," "makes the University of service to the farthest boundaries of the state and aims to serve all of the people of Wisconsin." The immense importance of postgraduate medical courses in conserving the stated aims is obvious. He would indeed be blind who could not perceive, without argument, that the present subject is one fraught with promise of even greater benefits for the general public than for the medical profession itself. We may well applaud the Wisconsin idea and emulate it.

Taking into consideration all of the circulars above indicated, one may make the following digest of what has been accomplished in Wisconsin:

The 1916 House of Delegates of the State Medical Society passed resolutions asking for postgraduate medical instruction from the University's Extension Division and appointed a committee which met with the Board of Regents early in the winter of 1917. An appropriation to secure the work was passed by the 1917 Legislature of Wisconsin and actual teaching was begun in September, 1917. The Bureau of Postgraduate Medical Instruction of the University was charged with the conduct of the work, which was largely influenced by war conditions. The first efforts continued until July, 1918, in ten of the larger cities of the state. Two teachers were assigned to the work, one covering "Diseases of the Chest," the other "Diseases of Metabolism." Six days' teaching was given at each of the ten urban centers, the time being equally divided between lectures and clinics at hospitals and sanatoria. The total registration was 247 physicians, these registrants constituting from 55% to 70% of the physicians located in the teaching centers, plus from 45% to 55% of the physicians from the respective surrounding rural sections. The smallest group numbered 21 physicians and the largest 40.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

The work thus begun has continued with much success, and resolutions of thanks were passed by the 1920 House of Delegates of the State Medical Society of Wisconsin. In 1918-1919 the work was conducted in six centers, with 57% of the physicians in those centers registered. In 1919-1920 there were twelve centers (for fifteen cities), with a total of 268 registrants. Sixty per cent of the physicians in these centers were registrants, and received instruction from sixteen teachers. The percentage figures for registration become still more impressive when we take into account the following published remark of the Secretary of the State Medical Society: "The (*stated*) number of physicians available for the courses is misleading, as fully 20% of those given are either inactive, retired or past the age when they are longer interested in graduate study." In other words, even at this early stage of the developing movement in Wisconsin, more than 75% of the available physicians in the extension centers have registered for the extension courses offered. The Wisconsin efforts are continuing along the lines of general expansions, improvements suggested by experience, and with a nucleus of full-time, salaried, extension teachers. The opportunities now offered consist of afternoon clinics and evening lectures, and loans from an extensive selection of anatomic models and charts, and medical and public health lantern slides and cinema films. Examination of the 1922 (unpublished) program for one representative extension center shows that twelve afternoon-evening "numbers" are provided. The registration fee is fourteen dollars, payable to the secretary of the county medical society.

The teachers number ten. Three are professors of medicine or hygiene from the Medical School of the University of Wisconsin. The Medical School of the University of Wisconsin provides only the first two years of a medical course and has no clinical instructional departments; but the services of seven prominent specialists have been enlisted (six from Milwaukee and one from Madison) for the purposes of the extension program. Each teacher meets this extension group for one "number" of the whole program.

Subjects have been chosen from the domains of clinical pathology, internal medicine, pediatrics, dermatology, urology, obstetrics, orthopedics, ophthalmology and otolaryngology. The treatment is partly by clinics, partly by lectures and partly by exhibitions of lantern slides and moving pictures.

It is possible that there are in operation in other localities, still further medical postgraduate extension courses which have not been reported to the writer; but the foregoing covers everything that an earnest canvass of the situation has disclosed. The disparity between the widespread pleas for such extension courses, their obvious importance, and the great magnitude of our country on the one hand, and the practical status of the movement on the other hand, is most striking. A few hardy pioneers are, with admirable enterprise, blazing trails; but real roadbuilding into the rich territory has yet to occur before the significant tillage can begin.

In approaching the practical task of starting the work in Pennsylvania, we should do our best to answer the questions: What should not be done? What should be done? What can be done?

It seems useless to do under a new name and plan those things which have long been done, and well done, in another way; or to attempt to accomplish by university extension courses those results which can only be achieved within the university center itself.

There already exist, in a sense, certain more or less universally extended methods of postgraduate medical education. Reference is here made to medical journals, reviews, abstracts, texts and so forth; to the meetings of general and special medical societies in the larger centers; to the special lectures, papers and discussions commonly provided by the county medical societies; and to various other general methods which we need not here pause to recite.

Extension courses should not overlap and consist of a mere rehash of these things. Neither should such courses attempt to provide those intensive, prolonged and serious studies which may only be pursued with promise of success during full-time residence at the graduate school of medicine of a university. The local facilities for extension teaching must necessarily be vastly more restricted than the facilities existing within the university itself; and all of the university's special facilities are taxed to the utmost to provide for the extraordinary needs of the more serious forms of graduate medical studies.

Extension courses should and, after normal development, can fill in a distinct and important gap which exists between those universal phases of postgraduate medical education represented by medical journals, societies, and so forth, and the special phases of such education which are pertinent only to the intramural work of an approved graduate school of medicine.

This is the definite statement of the problem of postgraduate medical extension courses, and the problem will need various solutions, corresponding to the natural classifications of the various localities within which extension courses become conducted. This is true because the gap just noted varies with the locality.

We may cite the following examples of classifications of localities: metropolitan cities with medical schools; the same with graduate medical schools; submetropolitan cities with and without medical schools; towns and rural centers, and so forth. The various facilities and needs of such classes of localities vary the solutions of the general problem.

The problems thus presented are complex; and their full solutions will not here be essayed because of time limitations and the avowed inability to foresee all of the necessary factors.

A partial solution is as follows: Current medical literature is so vast that no one physician could be expected to follow the whole clearly and discriminatingly. It is unavoidably diffuse and inanimate. There is much wheat, but also some chaff; and the processes of winnowing, classifying and evaluating are most difficult. But even given the graded wheat, it is still inanimate —the printed description of a rich harvest and not the physical reality—and here appears the first work for the extension teacher.

Owing to his intense specialization, the teacher is early in making critical, coördinating and practical studies of the new developments within his particular field. If so prepared he will go to the extension student's patient and there vitally exemplify and clarify to the student the newer knowledge which has previously been either unknown or hazy to the student. He at once supplies an important need that mere print or speech can but rarely satisfy.

Hence it is submitted that the initial step in establishing normal extension courses should be to appoint such highly skilled teachers, each within his own field, to conduct clinical conferences at suitable loci for comparatively small groups of extension student physicians—groups that are not so large as to inhibit effective personal contact between patient, teacher and student.

The only truly suitable locus is a hospital fully equipped to furnish to the teacher and student physician not only the patient but also his case history, complete in every modern sense. The teacher should have proper opportunity to examine the patient, to study the history and laboratory findings, and to draw his deliberate conclusions before being expected to conduct his teaching clinic. Unless such pains be taken, the value of the teaching is dubious. For greatest teaching efficiency, the case histories should be multigraphed, so that each member of the teaching conference may be supplied with his own set.

We have touched upon a single phase only of medical extension teaching of real value. Though several other kinds are held in mind, the stated phase is believed to be sufficient for our immediate purpose, which is to advocate that extension courses shall begin at once in Pennsylvania upon this definite basis.

Once the movement in our state becomes firmly established upon this solid foundation, all desirable expansions will occur without mistakes and unnecessary delays, in a natural, evolutionary growth from normal infancy to strong maturity, and minus the futilities and dangers of rainbow chasing.

Let us be under no illusions that our first task, though so readily stated, is by any means a small one; for in verity it is huge. But likewise the state possesses such exceptional resources of the sort needed to cope with the task that in all reason we should now confidently address ourselves to it.

The necessary preliminary work is already so far advanced that one may expect teaching to be under way in two or three extension centers by February, 1923. The formal preliminaries began one year ago at the General Meeting of the Medical Society of the State of Pennsylvania in Philadelphia. A resolution was adopted looking toward coöperation between the Society and the Graduate School of Medicine of the University of Pennsylvania. Conferences between representatives of the Trustees of the Society and of the University of Pennsylvania have resulted in the draft of a clear-cut and practical plan. This plan, with their hearty recommendation that it be adopted, has just been laid by the Trustees of the Society before the House of Delegates. Its details require no statement here; but the following, slightly paraphrased, quotation from the report is necessary to complete the picture presented here:

> There is no reason why hospital staff members of note throughout the state should not coöperate in this general university extension plan. Indeed the ideas of the University of Pennsylvania with regard to graduate medical education are so broad that coöperation by representative members of the faculties of Jefferson Medical College, University of Pittsburgh and other high-class medical schools, is entirely feasible—will in fact be invited and welcomed.
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> A very important part of the Pennsylvania plan of graduate medical education is the upbuilding, as rapidly as possible, of an extensive coöperation between the central organization and extramural hospitals, clinics, medical laboratories, libraries, museums, institutes and societies. At present, more than fifty of Philadelphia's medical organizations are found in such a state of coöperation.
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> The University authorities are convinced that the plan of extensive and unlimited coöperation between the University's Graduate School of Medicine and other medical institutions, holds potentialities of utmost moment not only for the Graduate School of Medicine but for the extramural institutions themselves.
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> Practically unlimited medical educational and investigative potentialities are existent in the many excellent but widely distributed hospitals and clinical and medical science laboratories, which have, as yet, established no broad educational relationships. These potentialities may well be activated and rendered highly effective by such definite and reciprocal educational connections as are provided by the graduate medical educational plans of the University of Pennsylvania.

In an earlier section of this paper the remark was made that the solution of the problem of extension postgraduate medical courses must vary with the characters of the local extension centers. Hence it is that the first efforts which the Graduate School of Medicine of the University of Pennsylvania is to put forth for postgraduate extension work in its home center, Philadelphia, must differ greatly from the plans above indicated. The first series of extension courses in Philadelphia will be offered freely to all physicians who choose to attend them. The courses will consist of lectures given every Monday, Tuesday and Thursday evening from October 23, 1922, to June 14, 1923. These lectures will also be scheduled for the members of all of the various departmental groups of regular students in the Graduate School of Medicine. The regular graduate students have no other general assemblies for instructional purposes.

There will be five series, totaling about ninety systematic lectures given by about fifteen professors of the school. The respective series subjects are: clinical radiology; clinical biochemistry; clinical bacteriology-immunology; general syphilography; special syphilography; and relationships of clinical specialties to general medicine and surgery. The first named series will be given on Mondays, the second and third on Tuesdays and the fourth and fifth on Thursdays.

This plan adheres to the general idea of filling in a gap and avoiding overlapping of effort. In spite of the large number of public medical meetings and clinics held in Philadelphia, they do not cover the systematic postgraduate medical field here contemplated.

Each week's extension program will be published in the "Weekly Roster" of the Philadelphia County Medical Society precisely like the programs of the various medical society meetings, which appear in the same publication.

It would be most appropriate for the Medical Society of the State of Pennsylvania, its component county medical societies, the great medical schools, hospitals, laboratories and clinics of the state, and its eminent medical men, professed teachers or otherwise, to join hands in this new, important and undeveloped field of medical education, which is so pregnant with promise of benefits to every citizen of the state.

The legislators of Pennsylvania, no less than their Wisconsin brethren have wisely recognized the continuing necessity for postgraduate medical education of the highest type for our state. Were it not for the timely aid which the last Legislature of Pennsylvania extended to this cause it would have languished, and this "service to the farthest boundaries of the state" would have been delayed a decade.

DISCUSSION

Dr. G. E. de Schweinitz (Philadelphia): Dr. Meeker's characteristically excellent paper does not require discussion, but richly deserves approbation. He has outlined a plan of medical extension education which I am glad to understand has received the endorsement of the House of Delegates of our Society. Most earnestly I hope this plan shall be put into operation. As the result of some correspondence with Dr. Webb, I made special reference to this matter in St. Louis last spring, and this paragraph of my address met with the approbation of many physicians, especially in North Carolina, where efforts along these lines have been successful, and have produced highly satisfying results.

It is well known that medical schools must, if they shall fulfill their proper functions, bear in the future much broader relationships to the community and to community service than they have done in the past. The efforts in these respects in Wisconsin have been described by Dr. Meeker. Quoting from the address to which I have made reference, I may say: "The recent graduate stationed in the country, lest he suffer a disastrous eclipse, must keep in practical touch with new developments in diagnosis and treatment, and moreover, his patients are insistent that he shall do so. He cannot leave his duties to seek such information and instruction in distant 'centers'; hence methods should be devised whereby such facilities shall be brought to him in an endeavor to satisfy the practitioner's laudable ambition and his requirements, as well as the desires of his clientele."

Not only does a plan such as Dr. Meeker has outlined bring to physicians in rural districts and smaller centers the information they desire, and deserve to have, but it is sure to be a means of educating the public and of establishing confidence in the aims and practice of legitimate medicine and surgery. I can think of no movement in relation to the expansion and elevation of medical effort which deserves more hearty support.

Dr. D. A. Webb (Scranton): For the immediate future, efforts in medical progress should be directed to postgraduate methods. Optimists in this endeavor are few; it would seem, however, that they ought not to be confined exclusively to the intramural teachers and students resident in Philadelphia.

The relation is reciprocal and extramural students at different loci should manifest a desire to second the enlarged program of the new Postgraduate School established by the University. To confine the University efforts to intramural work alone—for lack of this needed coöperation—is to limit and hamper its contemplated program. The equipment and the teaching personnel are available in Philadelphia; tangible evidence of a desire for extension of its work to fields beyond is all that is needed to elicit a hearty response from the University.

In Europe, where every large community center is very generally also a medical center at brief distances apart, frequent intensive intramural courses serve to keep the practitioner alert. In America, with medical centers at distant points, the problem has heretofore been only indifferently attacked in the occasional six weeks' course, and this latter attempt is now for the first time one of genuine effort to reach the busy practitioner in his own home. The success or failure of it will depend upon the appreciation shown by the busy doctor. Other departments of the University have successfully carried instruction to the student. Why should the practitioner be predicated—in advance—a failure in an attempt at self-improvement?

At least in this County of Lackawanna a sufficient number of enthusiasts have pledged their money and promised their time to make the trial, believing that, as in other enterprises, the inauguration will resolve many of the predicted difficulties. We are likewise desirous that as many as possible of our sister societies coöperate by establishing similar University relations.

Dr. Walter F. Donaldson (Pittsburgh): Last June, in Greensburg, I had the pleasure of attending an all-day session which had been provided on a plan inspired by the plan presented this morning by Dean Meeker. The members of the hospital staff in Greensburg prepared case histories pertaining to a number of interesting surgical and medical patients. On the morning of this meeting two teachers from the University of Pennsylvania Postgraduate School arrived in Greensburg and spent the morning going over the histories and the various reports with the members of the staff of that hospital. In the afternoon one hundred and twenty-five physicians from Westmoreland and surrounding counties were gathered in a room in the hospital. Each of them was presented with a copy of the history of the patients to be presented during the afternoon, and I assure you those typed histories were classics. To read and carry home one of those histories was an inspiration to every physician to go out into his own work and make more thorough examinations and keep better case histories. Needless to say, those teachers sent out by the University took advantage of this splendid opportunity and gave an instructive clinical demonstration. That was a demonstration in a few words of how Dean Meeker and the Committee of the Board of Trustees hope this plan will work out in the farthest communities. It may be that a community doesn't have a hospital, but it undoubtedly has some institution, possibly a county institution, that has a great deal of clinical material in it.

One of the most practical phases of this entire plan is that it is a real plan. It provides for weekly meetings, possibly not every week in the year, maybe forty weeks yearly over a period of two years, and at the end of that two years, each man who has completed the work and passed a satisfactory examination, or whatever the test may be, will receive some certificate setting forth the fact that he has taken part in this work. You can see at a glance that it is no small task either for the school or for the physicians of a community to undertake. It is not something to be taken up and dropped in six weeks. It is something to be taken up and carried through for two years, and at the end of that two years, the student receives some practical evidence of the fact that he has completed the course. Needless to say, he has been benefited throughout the entire course.

We pledge Dean Meeker and the Trustees the full support of every society that undertakes this work.

President Lawrence Litchfield (Pittsburgh): It is very commendable in the young medical graduate to prefer to starve in Philadelphia rather than to sever his connection with medical centers, but we want you to take this question home with you to your county societies and immediately start to make rural practice more attractive, so that desirable young men will feel they can go into rural communities where they can make a living at once, get married and have a home, instead of boarding in Philadelphia indefinitely.

A PHYSIOLOGICAL CONSIDERATION OF NEPHRITIS*

GEO. A. CLARK, B.S., M.D.
SCRANTON

By physiological consideration we mean "pertaining to the functions of the body and organs" during a pathological condition known as nephritis; "an inflammatory condition of the kidneys." Such a title permits of wide interpretation. We will discard all unnecessary terminology. Our purpose will be to scrutinize carefully the mass of recent scientific literature and from it select a few tests which will give us a greater insight into abnormal kidney function, as also a basis for a rational therapeutic régime.

Nephritis has been known and studied for a long time as a clinical entity. It is, however, to the branch research departments of medicine that we are indebted for a more comprehensive understanding of this disease. The physiologist has shown us that the normal kidney possesses the power of eliminating water from the body and a selective ability for removing the end products of nitrogen metabolism from the blood stream.

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From the laboratory of the biological chemist, we have learned that the end products of metabolism in the blood stream of a normal individual are at a constant level. With the first insult to the kidney, the ability to eliminate these lags and the power to concentrate them is impaired. As a result the kidney does not rest at night. The amount of urine excreted at night is increased, the specific gravity lowered, while the percentage of urea nitrogen remains at a constant level of less than 1%. As the damage progresses over a long period of time, the equilibrium of nitrogen in the blood is upset. First, the uric acid increases in amount, then the urea, and finally the creatinin. These chemists have solved other interesting problems that result from the accumulation of these waste products of metabolism in the blood stream. One of the most important of these is the increased difficulty the blood has in neutralizing and eliminating the acids from the body, resulting in the impaired combining power of the blood and alveolar air with carbon dioxide. These discoveries, when applied to the clinical findings, are of great value in differentiating between impending coma and acidosis.

The pathologist shows under the microscope the damage done to the different parts of the kidney. His most important contribution has been the discovery that certain drugs can produce nephritis in dogs. Uranium nitrate causes a tubular form of nephritis, as do to a lesser extent ammonium chromate and bichloride of mercury. Arsenic, cantharides and snake venom affect chiefly the glomeruli with very little action on the tubular epithelium. This discovery has opened up a field of experimental pathology that has given some very important findings.

The pharmacologist, making use of these important data, has tested out his diuretic drugs on dogs with experimental nephritis. He has shown that in several grades of severe nephritic involvement diuretics produce oliguria instead of polyuria. Thus, experiments with diuretic drugs must be conducted with great care lest an anuria and uremic coma be suddenly precipitated.

Foods have also been examined with respect to their acid or alkaline content, and in those cases of nephritis in which there is a suspicion of acidosis it is necessary to bear in mind that many foods, when broken down by the body, give an acid base. The articles of diet which have a pronounced alkaline ash are fruits, leaves, and tubers. The ash of the grains and seeds is markedly acid. From these observations, one can readily see how dangerous it would be to give a patient with an acidosis a diet of oatmeal, rice, wheat, etc., all of which have a high acid base.

Only laboratory tests that are essential in making a diagnosis will be considered. These tests have been verified in a large series of cases, are easily applicable, and have proved their worth in giving both an accurate diagnosis and a very good insight into the prognosis and treatment.

The phenolsulphonephthalein test was introduced by Rowntree and Geraghty to show the permeability of the kidney. The original test advocates the catheterization of the ureters and the injections of the dye intravenously. This is not necessary when it is used as a routine in nephritic cases. Very satisfactory results have been derived from the following procedure. The patient is requested to empty his bladder and 1 c.c. of the dye is injected in the lumbar region. The patient is then given a glass and a half of water to drink. Ten minutes are allowed as an average length of time for the dye to appear in the urine and two specimens are collected at the hour and two-hour periods beginning at the end of this ten-minute period. The normal kidney excretes:

First hour	40	60%
Second hour	20	25%
Total	60	85%

In severe cases of nephritis only a trace may be present at the end of the two-hour period.

The Mosenthal test meal has been considerably misunderstood by the medical profession and as a result this very important test has not been used. Too much emphasis has been laid upon the test meal part and the important findings from the two-hourly specimens of urine during the day, and the night specimens have been overlooked. The principle or the truth upon which the test is based is that the nephritic kidney loses its flexability. In other words the night urine will be increased in amount and the specific gravity will be at a lower constant level. This is because the kidney is no longer able to concentrate the urine, and in order to eliminate all the waste products of metabolism, it must work overtime.

The test may be carried out in the patient's home without difficulty. Three average meals are given the patient, the only requisite being that they do not contain an excessive amount of salt, meat or water. Specimens of urine are collected every two hours, and a night specimen beginning three hours after the last meal from 8 p. m. to 8 a. m. The patient is also requested not to drink between meals. Mosenthal has shown in the Archives of Internal Medicine that the average night urine in the normal individual is less than 400 c.c. In a large series of cases the specific gravity varies from 10 to 25 points during the 24 hours. The nephritics, on the other hand, have a fixed specific gravity of less than 10, often in the more advanced cases showing a variation of less than 2-3 points.

TABLE I

Severe case of nephritis. Miss M., age 24. Referred by Dr. B.

Time	*Total Urine*	*Specific Gravity*
8-10	425 c.c.	1004
10-12	200 c.c.	1005
12-2	330 c.c.	1004
2-4	425 c.c.	1004
4-6	600 c.c.	1006
Total day	1980 c.c.	
Total night	750 c.c.	1006

The blood chemistry in nephritic cases has been closely studied during the last few years in the Roosevelt Hospital by Dr. Lyle, of the Harriman Laboratories, and in the Postgraduate Hospital under the direction of Myers and Chase. Many other hospitals and institutions have taken up this work and find that their nephritic cases cannot be intelligently treated without the blood chemistry examinations. The normal findings of the blood are as follows: Urea, 15; uric acid, 2; creatinin, 2; sugar, 0.1; CO_2., 50.

TABLE II

Urea N.	*Uric a.*	*Creatinin*	*Name*
75	8.6	8.8	Mr. G.
102.52	7.2	7.6	M. T. H.
14.5	7.1	5.6	M. K. H.

When the creatinin in the blood is over 5 mgs. per 100 c.c. of blood, a fatal prognosis may be made. This conclusion has been carefully tested out by almost all of the workers in nephritis. It is frequently desirable to give to the family of the patient an idea of the prognosis. This can be well illustrated by case I, table II. The patient had an anuria for four days, and the blood chemistry indicated a fatal issue. At that time, the patient was dressed and about the house. His appearance was not that of a seriously sick man, nor was it possible to elicit any previous history of his ailment. There was no edema and very little dyspnea, yet the family was informed of his condition, and within a week the patient was dead.

The important indications of blood chemistry are summarized in the following points: (1) The estimate of the CO_2. content of the blood in all cases suspected of acidosis, particularly where dyspnea is an important symptom. (2) The testing of the blood for the amount of creatinin as a prognostic sign. (3) The diagnostic determination between essential hypertonia and chronic nephritis by examining the blood for the amount of nitrogenous waste products.

In order to study nephritis it is necessary to subdivide the disease into different groups or headings for their individual consideration. The literature has been crowded with suggestions, and the struggle for recognition between the pathologist and clinician has resulted in introducing to the medical profession many so-called entities to be diagnosed and treated as such. Some of the most common are tubular, acute glomerular, parenchymatous, primary disseminated, secondary disseminated, interstitial, congestive and sclerotic nephritis. They are all interesting but not applicable, at least from a practical therapeutic or clinical standpoint. They have two main faults: First, they do not represent clinical entities; and second, they are not confirmed by clinical or pathological observations. Nephritis is a slowly progressing disease which may become chronic with or without exacerbations. Considering the kidney as possessing two main functions, namely, to eliminate fluid and to excrete the waste products of metabolism, we will classify nephritis under three headings: (a) Acute Nephritis (mechanical type); (b) Latent Nephritis; (c) Chronic Nephritis (mechanical metabolic type).

Under the mechanical type we will group those conditions which have, as the name signifies, a mechanical disturbance to the normal function of the kidney. The most common disorder of this nature arises from broken compensation. When the heart fails there is a damming back of the blood in the different viscera, causing an acute or chronic passive congestion. There is no immediate kidney damage although its ability to excrete is impaired and sometimes temporarily suspended. An enlarged prostate will so interfere with kidney function as to suggest a severe nephritis. When the original cause is corrected the kidney function returns to normal. Other conditions frequently met are the acute kidneys resulting from toxemias such as bacterial toxins, fever, pregnancy, and exposure to cold. There is a rapid paralysis of renal functions. Many suggestions have been made as to the condition that exists in the kidney at the time. At any rate, there is an acute inflammatory reaction that rapidly subsides as soon as the initial cause is removed. In fact, any one of these many conditions may cause a subacute nephritic condition. This will be considered under the heading of latent nephritis.

The case shown in Table III was a young woman about 20 years of age, who came into her physician's office complaining of swelling of the ankles during the day. This attack of edema followed an acute tonsillitis. Upon examination, the doctor found marked edema of both extremities. He immediately sent the patient home and to bed.

TABLE III

Case of acute nephritis (mechanical type). Miss , aged 20. Referred by Dr. W., Dec. 18, 1920.

Time	*Total Urine*	*Sp. Gr.*	*Blood Chemistry*	
8-10	65 c.c.	1024	Urea	13.9
10-12	125 c.c.	1024	Uric acid	3.5
12-2	60 c.c.	1028	Creatinin	0.82
2-4	60 c.c.	1024	*Phenolphthalein*	
4-6	100 c.c.	1030	First hour	72%
			Second hour	16%
Total day	410 c.c.			
Total night	300 c.c.	1028		88%

Because she felt so well and resisted going to bed the physician thought it advisable to have a kidney function examination made. The findings showed a high specific gravity varying between 1024 and 1030. The total amount of urine for the 24 hours was below normal. The blood chemistry was within normal limits with the exception of uric acid, which showed some increase. An interpretation was made of a mechanical kidney condition, probably toxic in origin, and a favorable prognosis given. The patient was placed upon a Karrell diet for three days. This was followed by a low protein salt-free diet for one week. The patient was cautioned to be careful about her diet for three months. A rapid and complete recovery was made and there has been no recurrence of the nephritic condition.

TABLE IV

Miss M. Referred by Dr. K., March 24, 1921.

Time	*Total Urine*	*Sp. Gr.*	*Blood Chemistry*	
12-2	120 c.c.	1022	Urea	20
2-4	60 c.c.	1024	Uric acid	7.4
4-6	30 c.c.		Creatinin	1.48
Total day	210 c.c.			
Total night	330 c.c.	1028		

One month before this examination, patient was at the Mary Keller Hospital with a severe cardiac breakdown. At that time, the urine showed two plus albumin, specific gravity 1028 to 1030, and many hyaline and granular casts. There were also present a large number of red blood cells. The physical examination revealed a markedly hypertrophied heart with the first sound entirely eliminated. The liver was considerably enlarged and painful. This case shows from the kidney examination a marked chronic passive congestion of the kidney. The blood chemistry is not increased except to a moderate degree in the uric acid. The phenolsulphonephthalein test shows a retardation the first hour, but a good total elimination of 52.5. From an examination of the urine alone, one would be led to suspect a very severe nephritic condition. However, after compensation was established, following digitalis therapy, the kidney condition rapidly improved.

LATENT NEPHRITIS

The routine examination of the urine, both for life insurance and in the offices of the medical practitioner, has revealed an astonishing number of individuals that have a latent nephritis. This, as a rule, causes the patients very little discomfort and is discovered in an accidental manner. It is, however, prone to exacerbations. Any special strain on the kidney rapidly lowers its function and renal symptoms become evident. Pregnancy, acute infections, and surgical operations are among the numerous excitant causes.

The medical profession views this group of nephritic conditions with an almost total lack of interest. A placebo is given and the patient is encouraged by the remark that "a man is as old as his arteries or kidneys." Should that same physician receive a case of chronic diabetes he would bend all his energies in his effort to keep the urine free from sugar. Does it not seem reasonable that a patient with latent nephritis should be placed upon a régime of diet suitable to the degree or amount of kidney damage? Such a diet I should like to present for your consideration—a modification of one used in the outpatient department of the Massachusetts General Hospital. It is not difficult for the patient to follow and can be modified as the kidney condition improves.

NEPHRITIC DIET SHEET

Any combination of the foods listed below may be selected. Foods not listed below must not be taken. In Group 1 there is a restriction in the total amount. A full portion in Group 1 is equivalent to approximately 4 grams of protein. In Group 2 the quantity of each is not restricted, although you are urged to use discretion.

Your total score for the day should be { Breakfast......
Dinner.........
Supper........

Your total amount of fluid should be .... *pints*
Number of times meat is allowed each week ....

Group I (Each full portion counts 1)

Bread (white)	1 av. slice
Bread (graham)	1 av. slice
Uneeda biscuit	5 crackers
Shredded wheat	1 biscuit
Cereals	
Oatmeal	2 tbsp.
Boiled rice	3 "
Cornmeal mush	4 "
Cream of wheat	6 "
Farina	6 "
Milk	½ glass
Egg	1 egg
Egg (scrambled)	1 tbsp.
Custard	2 "
Baked beans	1 tbsp.
Lima beans	1½ tbsp.

Potato, creamed	1 tbsp.
Potato, mashed	1½ tbsp.
Potato, boiled	1½ med.
Green peas	2 tbsp.
Canned corn	2½ tbsp.
Onion, boiled	3 tbsp.
Macaroni	4½ tbsp.
Squash, boiled	5 tbsp.
*Codfish	1 unit
*Haddock	1 unit
Oysters	4 oysters
*Chicken	1 unit
Lamb chop	1 chop
*Beef roast	1 unit
*Beef steak	1 unit

*Unit of measurement for meats given in list is a Uneeda biscuit cracker.

Group II (No restriction)

Vegetables

Turnips
Carrots
Cabbage
String beans
Cucumbers
Celery
Tomato (fresh)
Tomato (cooked)
Lettuce
Asparagus
Cauliflower

Fruits

Watermelon
Plums
Pears
Peaches
Pineapple
Grapes
Apple sauce
Raspberries
Blueberries
Muskmelon
Apple
Strawberries
Prunes
Orange
Grapefruit

Miscellaneous

Cornstarch
Arrowroot
Tapioca
Post Toasties
Maple syrup
Olive oil
Sweet butter

The old low-protein, salt-free diets are generally not low in protein although they may be poor in salt. They also offer to the patient large amounts of cereal protein which are complex in character and prohibit meat proteins which are easily broken down. The secondary anemia almost always present is aggravated by such a régime and the patient is receiving such a high protein intake that the kidneys are invariably overburdened. Let us take an example. A patient is urged by her physician to give up all meats. She is allowed two quarts of milk, eggs, bread, and vegetables. Such a diet would give roughly the following protein:

2 quarts milk	32	gms.	of	protein
8 slices bread	32	"	"	"
2 eggs	8	"	"	"
Vegetables	25–50	"	"	"
	97–122	"	"	"

TABLE V

Mr. S., aged 57. Referred by Dr. W.

Mosenthal Test			*Sod. Chl.*	*Nitrogen*
8-12	390 c.c.	1014	6.5	5.9 day specimen
12-4	240 c.c.	1018		
4-8	300 c.c.	1018	0.7	5.6 night specimen
Total day	930 c.c.			
Total night	630 c.c.	1018		

Phenolphthalein

12.30	35
1.30	20
	55

Blood Chemistry

Urea	11.6
Uric acid	6.4
Creatinin	3.8

The patient is a married man, aged 57. His family history is of significance. Father died with a stroke at the age of 45. Uncles on his father's side all died suddenly. At the age of 5, the patient had scarlet fever and later on a few attacks of tonsillitis. The patient came in because during the last few years he has been refused life insurance. Repeated examinations of his urine showed a faint trace of albumin, and for the last 10 years he has had a high blood pressure ranging around 190. The patient has no nocturnal polyuria, no dyspnea and only occasional attacks of bitemporal headaches. The examination of his kidney workup shows that he has had a low grade chronic nephritic condition for a number of years. The specific gravity is relatively fixed and the proportion of night urine is increased above normal limits. The creatinin and uric acid in the blood are well above normal limits. It is a difficult question to decide whether the kidneys are the primary cause or the hypertension. We have evidence that the kidneys are considerably damaged and it seems reasonable to use this as a basis for our therapeutic endeavors rather than the fact that the patient has hypertension. Our efforts should be to relieve as far as possible any undue strain upon the kidneys, by cutting down the nitrogenous intake. The patient also has difficulty in handling salts, so the salts in the diet should be restricted. In glancing through the literature, one notes a marked division of opinion among the authorities as to the grams of protein per body weight that are essential to maintain the nitrogenous equilibrium. The average can be safely placed at one gram per kilo. However, Mosenthal and others have found that patients can get along without ill effects on much less.

This patient was placed upon 12 points a day, three for breakfast, six for dinner, and three for supper. The fluid intake was also increased. The patient was advised to rest for one hour each day after lunch and to remain in bed Saturday afternoon and Sunday. Such a diet permits, as you see, meat as well as vegetable proteins, fresh vegetables and fruit. In this way, the patient is provided with sufficient easily assimilated meat protein to replace the body wear and a large amount of iron.

TABLE VI

Miss C. Referred by Dr. E., Feb. 23, 1922.

Mosenthal Test			*Sod. Chl.*	*Nitrogen*
8-12	210 c.c.	1032	.6	9.1 day specimen
12-4	180 c.c.	1036		
4-8	150 c.c.	1038	3.8	8.6 night specimen
Total day	540 c.c.			
Total night	480 c.c.	1036		

Phenolphthalein Test	
First hour	11
Second hour	21
	32

Blood Chemistry	
Urea	11
Uric acid	3.7
Creatinin	3.0

This patient came in with indefinite symptoms of not feeling well. Her urine showed only a trace of albumin with no casts. However, her blood pressure at that time was 215 over 130. She was overweight, but had always been very active and was working every day. The patient was placed upon a restricted dietary régime of 12 points. One month later, she came into the office for a second examination. She had lost 20 pounds, was feeling better than she had for years, and her blood pressure was 165 over 105.

CHRONIC NEPHRITIS (MECHANICAL METABOLIC TYPE)

The mechanical metabolic type may vary in its severity from nocturnal polyuria with edema, to uremic coma. There is present an inability to concentrate the night urine in regard to both the specific gravity and nitrogen. Very soon the equilibrium of the blood is disturbed and the end products of nitrogen metabolism are increased. With this accumulation of nitrogenous end products the symptoms of chronic nephritis make their appearance. Nocturnal polyuria with daytime edema of the ankles are among the first. Later the patient develops dyspnea, orthopnea, failing vision, anasarca, broken compensation, and finally death following uremic coma. These symptoms may not all be present, as they depend upon the rapidity of the disease for their development. However, the laboratory findings are constant at the different stages of the disease and give an accurate idea of the severity of the nephritis and the prognosis.

TABLE VII

Miss M., aged 24. Referred by Dr. B.

December 9, 1920

Mosenthal Test		
8-10	195 c.c.	1008
10-12	45 c.c.	1008
12-2	135 c.c.	1010
2-4	150 c.c.	
4-6	50 c.c.	
6-8	40 c.c.	
Total day	615 c.c.	
Total night	870 c.c.	1008

Phenolphthalein Test	
First hour ..	22 %
Second hour.	4.5%
	26.5%

Blood Chemistry	
Urea	25
Uric acid ...	5.2%
Creatinin ...	1.2

June 22, 1921

Mosenthal Test		
8-10	425 c.c.	1004
10-12	200 c.c.	1005
12-2	330 c.c.	1004
2-4	425 c.c.	1004
4-6	600 c.c.	1006
Total day	1980 c.c.	
Total night	750 c.c.	1006

Phenolphthalein Test	
First hour	55%
Second hour ..	10%
	65%

Blood Chemistry	
Urea	16.3
Uric acid	3.6
Creatinin	3.7

February 3, 1922

Mosenthal Test			*Sod. Chl.*	*Nitrogen*
8-12	90 c.c.	1019	3.1	4 day specimen
12-4	570 c.c.	1012		
4-8	360 c.c.	1014	2.9	3.9 night specimen
Total day	1020 c.c.			
Total night	1140 c.c.			

Phenolphthalein Test	
First hour	15
Second hour	6
	21

Blood Chemistry	
Urea	14.5
Uric acid	7.3
Creatinin	2.6

September 22, 1922

		Sod. Chl.	*Nitrogen*
Total day	1200 c.c.	1.4	4.2 day specimen
Total night	750 c.c.	1.5	3.7 night specimen

Blood Chemistry	
Urea	36.24
Uric acid	3
Creatinin	2.2

December 9, 1920.—This patient is a girl about twenty-four years of age, suffering from repeated attacks of rheumatism. She gives also a history of chronic tonsillitis extending over a number of years. During the last attack of rheumatism, the patient became very sick and complained of severe and persistent headaches, bitemporal in character.

She was sent to a hospital. At this time her urine showed considerable albumin, but only a few hyaline and granular casts. A complete nephritic workup was made. This showed a marked fixation of specific gravity, the day's specimen with a variation of between 8 to 10, the night with a marked increase over the day and a specific gravity of 1008. The dye test shows a marked decrease with only 26% for the two hours. The blood chemistry presents a marked increase in urea and uric acid. The creatinin is within normal limits 1.2, but is above that usually found.

The diagnosis in this case is a chronic nephritic condition which is of long standing and of severe character. Although the creatinin is not very much increased the prognosis is not particularly favorable. However, under strict nephritic diet, the headache should improve and the condition become quiescent.

Future progress: Two weeks after the kidney function test, while still in the hospital and on nephritic diet, the patient developed a paroxysmal tachycardia which lasted twelve hours. There was very little distress, although the patient complained of discomfort and shortness of breathing. The cardiac rhythm was regular and the pulse count at the apex ran about 200. Digitalis was pushed and that night the pulse dropped to 85.

About the first of February, the patient returned to her home and remained for a time on the nephritic diet. Her condition was satisfactory and her headaches had ceased. In fact, she felt far better than the severity of the kidney condition warranted. She gradually became careless of her diet, restless and irritable. Towards the middle of April she went for a long walk, ate a hearty supper, and in the morning had another severe attack of rheumatism with an exacerbation of her kidney condition. A short time later she was sent back to the hospital. She was dangerously ill for several weeks, and had another attack of paroxysmal tachycardia with evidence of circulatory distress.

Second attack: On June 22d another kidney function examination was made. This showed a more marked fixation of the specific gravity with the largest variation between 1004 and 1006. There was, however, no marked increase of the night specimen. The dye test showed an improved elimination with a total for the two hours of 65%. The blood chemistry gave the urea and uric acid as only slightly increased above normal limits. The creatinin, however, had risen to 3%. The interpretation of the findings at this time was that the kidney condition had been steadily progressing, and was now of a more serious nature than was found at the December examination. Although the dye elimination had increased, and the blood chemistry in two of the constituents had decreased to almost normal limits there was nevertheless a marked increase in the amount of creatinin. This was explained by the fact that for the last month the patient was on a very restricted kidney diet, which had a tendency to reduce the urea and uric acid in the blood. In spite of this strict régime, the kidney condition steadily progressed, as is shown by the increase in the creatinin and the fixation of the specific gravity. Three or four weeks after the above test was made, the patient had her tonsils removed. The day following the removal the specific gravity jumped to 1020 and 1024. This curious condition lasted only a few days. The specific gravity has again dropped down to between 1006 and 1004.

February 3, 1922: The entire kidney examination shows a very marked improvement over the examination made several months ago. The specific gravity is no longer fixed, but ranges from 1010 to 1019. There is present a marked nocturnal polyuria, and the patient is putting out almost as much sodium chlorides during the night as during the day. This is true also of the urea. The total urea found in the urine for the 24 hours is rather low, as is that found in the blood chemistry. Although she has difficulty in handling proteins, as is shown by the urea in the night specimen, I think it would be advisable gradually to increase her protein intake. She is excreting more salt than is necessary, and this should be eliminated from the diet except for a very small amount in the cooking. The blood chemistry shows a marked improvement. The creatinin has come down. I think it would be advisable to allow the patient small amounts of meat protein two or three times a week. As the patient improves and her condition warrants, this diet can be increased from time to time.

TABLE VIII

C. B., aged 45. Referred by M. T. H.

July 4, 1922

Mosenthal Test			*Sod. Chl.*	*Nitrogen*
8-10	26 c.c.	1025	.468	2.364
10-12	25 c.c.	1030	.038	1.17
12-2	24 c.c.	1030		
2-4	25 c.c.	1030		
4-6	37 c.c.	1036		
6-8	60 c.c.	1035		
Total day .	197 c.c.			
Total night	65 c.c.	1032		

Phenolphthalein Test	
First hour ...	4 %
Second hour .	2.5%
	6.5%

Blood Chemistry

July 5, 1922			July 21, 1922	
Urea	18.64		Urea	23.3
Uric acid	4.6		Uric acid .	6.5
Creatinin	1.8		Creatinin .	3.1
Sugar	.3	Diastase 50%	Sugar ...	.16%
Six days later	.2	" 30%	Diastese .	.20%

The family history and the past history are not important. The present illness began in 1917, with attacks of dyspnea, but with no edema or other symptoms. This attack lasted for about a month and responded readily to treatment. In April, 1918, the patient was admitted to the hospital. He had at this time a recurrence of shortness of breath on exertion. He had also some vertigo, slight edema, nausea and nocturnal polyuria two or three times per night. The patient remained for a few weeks and was discharged improved. In October, 1920, the patient was again admitted, complaining of a recurrence of the same symptoms. A diagnosis was made at that time of myocarditis and chronic parenchymatous nephritis. His urinalysis showed two plus albumin with many casts and the sugar was negative.

He left the hospital one month later with his condition unimproved. The first of January, 1921, the patient was again admitted and has remained in the hospital ever since. He has been troubled with a great deal of edema and repeated accumulation of ascitic fluid. His abdomen has been tapped about 15 times. On July 4th the patient had a relapse and was in a very serious condition. The heart was in auricular fibrillation and the area of pericardial dullness was greatly increased. The pulse at the wrist was very weak and irregular, the dyspnea marked. The blood chemistry at that time was interesting. The urea, uric acid and creatinin seemed to be out of proportion to the amount of kidney damage we felt was present; they were not greatly increased above normal limits. The blood sugar was extremely high, 0.3 with a diastase of 50%. The urinary findings at that time showed albumin, sugar, acetone and diacetic acid. The alveolar air was taken, and found to be markedly below normal, 30 instead of 50. As we had evidence of acidosis, we felt that this was our first consideration. The patient was placed upon alkalies by mouth and rectum. Within 24 hours his condition had considerably improved. Six days later another examination was made of his blood and at that time it was found that his blood sugar had dropped from 0.3 to 0.2, his diastase from 50 to 30. Under the Karrell diet and digitalis régime his general condition improved. About 4,000 c.c. of fluid was withdrawn from the abdomen. On July 22, 1922, another blood chemistry was made. This blood chemistry showed a marked increase over the previous in regard to the uric acid, urea and creatinin. The sugar was within normal limits as well as the diastase. The interesting feature in this second examination is that, although the patient had improved clinically, the blood chemistry showed an increased amount of damage to the kidney. This we have attempted to explain in the bulk of the body fluid.

At the time of the first blood chemistry, the patient was very edematous and had a large amount of fluid in the abdomen. After this was entirely removed the true condition in the kidney made itself apparent by the increase in the nitrogenous end products of the blood. This case also illustrates the importance of examining a nephritis case in impending coma for the possibility of acidosis. The giving of large amounts of bicarbonates acted as a specific. The patient's condition immediately began to improve and the dyspnea decreased.

An autopsy was performed on this patient one month later. The findings showed a tremendously enlarged heart with adherent pericardium. The pericardium was also adherent to the left pleura and diaphragm. The liver was enlarged and showed a typical yellow mottling of long-standing chronic passive congestion. From the autopsy findings the condition presented the appearance of a primary cardiac failure with degenerative changes in the other organs due to long-standing chronic passive congestion.

The research laboratories from all over the country, after an infinite amount of work and pains, have presented to the medical profession new instruments with which to work to obtain a more accurate diagnosis and a more rational therapy. Does the bronchoscope give more accurate results in its sphere of work than the phenolphthalein kidney function test? Is it applicable in as many cases? Is there in fact any surgical instrument that has given to science as much illumination in obscure conditions as the findings of blood chemistry? And yet every new instrument is immediately sought after by both surgeon and medical man.

There seems to be extreme reluctance in accepting the latest laboratory tests that are less concrete but equally as serviceable. To carry these tests out is admittedly difficult, even to a trained pathologist, but the results are as exact and applicable to the patient as those derived from the more tangible x-ray. Nephritis has been changed by them from an obscure disease to one that can be followed step by step and a treatment instituted that is correct for each stage. There are not many physicians that would now treat a gastric condition without an x-ray or set a fracture without a plate showing the position of the bones. And yet they are perfectly willing to base a diagnosis and treatment of nephritis upon a rather casual examination of the urine.

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DISCUSSION

Dr. Harold W. Jones (Philadelphia): I had the pleasure of reading Dr. Clark's paper several days ago and wish to commend him on the very practical way in which he presented this subject. He rightly emphasized the importance of a physiological consideration of the kidney in order to treat nephritic patients and intelligently utilize functional tests. A functional test to be useful must be available as well as accurate, and I know of no more available tests than the ones Dr. Clark mentioned.

With regard to the Mosenthal test, or two-hour specific gravity fixation test, I wish to correct one point and add another. Mosenthal, in his first paper, emphasized the importance of the fixed diet, and I believe this is one of the reasons that it has not been more generally accepted. Dr. Clark emphasized the point that it was not essential to use the Mosenthal diet but that the ordinary house diet is satisfactory.

In regard to the night urine, Dr. Clark placed the normal volume as 400 c.c., following Mosenthal's first paper. In a later paper he changed this to 750 c.c. because it was shown that a large number of normals have a night volume well under 750 c.c. We also find certain normal persons with night volumes over 750 and many nephritics with a night urine under 750. The important point in the interpretation of the night urine is not the volume but the ratio between night and day volume. This is normally in the day three or four times as great as at night, while in nephritis, although the night volume may be less than 750, it is often twice as great as the day or equal to it. In the great majority of cases of nephritis this ratio is altered.

The variation of the specific gravity for normal persons, Mosenthal states, should be nine or more points. In a large series of reactions we have found many normals to vary only 6 or 7 points and I think it is better to lower the level and say anything over six is normal.

The fluid output sometimes changes the specific gravity readings, and there are certain normals who show a fixation of specific gravity at a high level, when the output is from five to seven hundred c.c. in 24 hours. On the face of it such a reaction would indicate severe nephritis. Therefore, when the output is low, a fixation of specific gravity at a low level is of greater significance than a fixation at a high level.

Of course, the so-called functional tests are not infallible and it would be just as great a mistake to judge a case from one functional test as from the physical signs alone. All factors must be considered and weighed carefully in order to come to any satisfactory decision in any case of severe renal disease.

Dr. Edward Weiss (Philadelphia): It occurs to me that the papers of Dr. Pepper and Dr. Clark serve admirably well together for a discussion of the dietary adjustment in nephritis. What Dr. Pepper has said in regard to water intake holds true for other constituents of the diet, such as salt and proteins. I do not believe we are justified in withholding water, salt or proteins purely on empirical grounds.

We now have fairly accurate means, in the recent functional methods just mentioned by Dr. Clark, for the determination of the kidney's ability to handle separately these various products of metabolism, and by these means we should determine, on a scientific basis, our dietary régime.

The empiricism that has been responsible for so much mismanagement in dealing with nephritis has been fostered, I believe, by the oft reiterated statement that the clinical and pathological findings in nephritis are difficult, if not impossible, to correlate. This statement has done the medical profession at large a great deal of harm.

If we reason upon a physiologic basis, we can determine from the clinical and functional findings in nephritis just where the lesion in the kidney is located, and to what extent it has progressed, and these findings will usually be borne out at the necropsy table.

This leads me to a criticism of the classification offered by Dr. Clark. Certainly the literature is already overburdened with too many names for the various renal lesions, and in our present state of knowledge, it does not seem to me that we can improve upon the classification adopted by Christian in "Modern Medicine." He speaks of acute and chronic nephritis, and divides the chronic lesions of the kidney into those with hypertension and nitrogen retention, and those with salt and water retention, and lastly, mixed lesions. The type with nitrogen retention will usually be found at the necropsy table to be the form long known as chronic interstitial nephritis, and the type with salt and water retention corresponds, as a rule, to the lesion long termed chronic parenchymatous nephritis.

It was a great pleasure, I am sure, to have heard Dr. Clark's admirable presentation.

Dr. W. W. G. Maclachlan (Pittsburgh): I wish to refer to a point pertaining to the pathological side of this question although I do not wish to give the impression that the functional side is not of great importance, although I think there is a possibility that we may occasionally lay too much stress on the functional side. The first example deals with Dr. Clark's so-called latent nephritis. A young physician on the staff of the Mercy Hospital consulted me this spring after he had been refused insurance on account of albuminuria. I examined his urine on a number of occasions and found always a definite trace of albumin and a few casts and an occasional leucocyte. After some persuasion he had his tonsils removed. His albuminuria and casts entirely disappeared and about two months after the operation he was accepted as a good risk by the insurance company. You may call this a latent form of nephritis, but I think it better to regard it as a purely inflammatory condition secondary to a focal infection and probably of bacterial origin. The other example indicates hypertension in young individuals. A boy of 14 that I saw a little over a year ago was carrying a systolic pressure of 140 and a diastolic of 100. He had a faint trace of albumin in the urine but no casts. The functional tests of the kidney were normal. One may say the case was the so-called essential hypertension in a younger individual. He had hypertrophied tonsils, which were removed. I saw him on many occasions during the following year; but it was not until 14 months afterwards that his pressure returned to normal.

These two examples indicate to me that in thinking of nephritis if we do not keep in mind the etiological or possibly the pathological conception, as usually in this early state the function is normal, we may not use the best therapeutic measures for these conditions, namely, the removal of focal infections.

I agree with Dr. Weiss in finding that Dr. Clark's classification is somewhat difficult to follow.

Dr. W. S. Russell (Steelton): I should like to know at what hours you take the tests of the day urine and the night urine. How is the time divided?

Dr. Clark (in closing): In regard to Dr. Russell's inquiry: For the patients in the hospital we take two-hourly specimens, beginning at eight o'clock in the morning, then at ten, etc. If the patient is at his home it is sometimes impossible to make him understand the importance of two-hourly specimens. In that case we use four-hourly specimens during the day. For the night specimens we begin at eight o'clock in the evening and continue to eight o'clock the next morning. The first specimen should be taken three hours after supper.

I do not want to leave this assemblage with the impression that I am trying to foster any new terminology. This is my impression in going through the mass of literature and being confused by terms. I have found it of some advantage in understanding and following these cases, and I just offer it for what it is worth.

POSTOPERATIVE INSANITIES*

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PHILADELPHIA

The insane states following operations are perhaps, next to secondary hemorrhage, the most important of all the various conditions that complicate major operations. They are, if anything, even more tragic when following minor operations where a favorable outcome is naturally to be expected.

This subject may be considered either from a surgical or a psychiatric viewpoint. To the psychiatrist the subject is one of deep interest as it offers, in some of its phases, an angle of investigation into the cause of insanity. To the surgeon it is of more practical interest, inasmuch as the understanding and control of the condition becomes a matter of grave practical importance in saving the operation and often the life of his patient.

Several questions present themselves at the outset of a study of this kind: (a) Why does insanity present itself at such a time? (b) What forms of insanity occur? (c) What are the conditions precipitating this condition? (d) Is it possible to avoid this occurrence? (e) What is the prognosis of this type of insanity?

Practically any type of insanity may be precipitated by either a major or minor operation. In the so-called chronic insanities, paranoia, paresis, senile dementia, the mental condition existed unrecognized previous to the operation. These are not strictly speaking what we mean by postoperative psychoses. The true postoperative psychosis is an acute condition precipitated by an operation, in an otherwise healthy individual. These chronic mental and border-line states I will treat separately.

In an analysis of 40 cases, a natural grouping occurs of acute manias and acute toxic delusional states. The most common condition is acute mania, with marked psychomotor activity and fairly fixed delusions. The toxic delusional states differ from these in an absence of the marked psychomotor activity and the presence of delusions and disorientation. In this latter group we are concerned largely with a nerve exhaustion factor, in the former with a more purely toxic condition. We may lay down a general rule that in the acute maniacal disturbances following operations the cardiorenal mechanism, if not entirely at fault, is at least an important contributing factor to the situation. Not infrequently we find other factors in addition to this, such as secondary infections, previous low-grade infections with minor toxemias, reactive endocrine disturbances, more particularly in operations on the sexual organs or directly on the endocrine system, and low-grade infectious toxemias such as syphilis, tuberculosis, etc., or low-grade visceral toxemias from liver disease.

Not infrequently the cardiorenal factor is the only factor in the case, and for that reason deserves special consideration both from the surgeon and the psychiatrist. We are here dealing with a profound intoxication largely from the kidneys, but to a less extent from the other organs. Back of this is the effect of the operation and shock on the cardiovascular system. It may be assumed that with a relatively normal kidney, and a relatively normal heart tone, the average individual will withstand the shock of operation, the effect of prolonged anesthesia on heart and kidneys, the shock of opening the abdomen or one of the larger cavities of the body, without manifestations of nervous or mental symptoms. The surprise is that such a large percentage of patients show so little reaction to shock of operations. When, however, there is a cerebral or nervous imbalance already existing, in a relatively normal brain suffering from the effects of prolonged intoxication with reactive disturbances in the endocrine system (and this is particularly true in adolescence, up to the thirtieth year, where a normal endocrine strain already exists), the effect of shock and the resultant relaxation due to derangement of visceral function is likely to have serious nervous or mental consequences. These reactions may be in the nature of a neurasthenia, a psychasthenia or a psychosis, depending on the fatigue and toxic reactions of the individual. Each individual has what may be termed a symptom level of nerve tone. When the nerve reserve, either from toxins or fatigue falls below this level, nervous or mental symptoms will develop.

When the heart muscle has already been damaged by disease, such as influenza, or as secondary result of valve disease, this may affect the function of the kidney or liver to such a degree as to produce marked functional disturbance immediately after an operation. This may be true even when the kidney is not organically diseased, i. e., when there are no albumin or casts in the urine. When there is evidence of kidney disease or marked disturbance of kidney function, this condition is of course accentuated, and increasingly so in proportion to the extent and duration of the kidney disease.

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Probably more important than either of these factors, but at the same time a nondissociable and linking factor is the blood pressure and blood pressure reactions. We are here concerned not so much with conditions of hypertension as with lowered blood pressure states. A persistent arterial hypotension needs much study and interpretation before a surgeon should attempt a major operation. It may mean a faulty myocardium, it may be the manifestation of a chronic endocrine insufficiency, such as seen in quiescent or healed tuberculosis, or it may be the manifestation of general low vital tone. In any event the reaction to shock conditions is much more likely to be pathological in this group than in the normal pressure group.

The kidney function is of vital importance in the postoperative insanities. When we have a patient who presents over night an acute insanity without prodromal symptoms, who is well to-day and insane to-morrow, the great probabilities are in favor of an acute kidney intoxication. It is at least our duty to exclude abnormal kidney functioning as the causative factor. This is equally true of the postoperative insanities, and especially those following immediately (within three or four days) after operation when we have an arterial hypotension or relative hypotension. It then takes but little further lowering of the blood pressure to produce serious consequences.

When there is a weak myocardium and with it a faulty function of the cardiac action, a prolonged major operation, especially when the abdomen is opened, causes such a shock depression to the heart and circulation, that it may be weeks before this automatically returns to the normal. If to this be added, as frequently happens, a sudden lowering of kidney function, we have the pathological picture most frequently presented in the postoperative insanities—a feeble heart action, marked loss of the muscular element of the first sound, loss of tone of the second sounds, low blood pressure with the systolic well under 100, a reduced kidney function as shown by the blood urea and the indigocarmine or phthalein tests. The tongue is dry, the pulse feeble, the skin is relaxed, the patient restless, at first suspicious and then with delusions, sometimes of suspicion or persecution, with a rapidly developing psychomotor activity, often approaching violence. If the exhaustion is profound, a depressed, delusional psychosis with restlessness, an agitated depression is sometimes seen. The former is the picture most frequently presented.

The test of the correctness of this principle of the causation of the psychoses in this group is evidenced by the prompt recovery when the cardiorenal balance is reëstablished.

One group of cases where the liver function is definitely disturbed as shown by the light jaundice, badly coated dry tongue, clay-colored stools, etc., is met with in nervous or epileptic cases where large doses of the bromides have been administered for some time previous to operation. Here again we have the same cardiorenal insufficiency. The general tendency here is to depression or depression with agitation.

Next to the cardiorenal group, and somewhat allied to it, is the operative group on the sexual organs, especially in the male. Operations on the testicles, the prostate, etc., are not infrequently followed by transient mental states. These are usually in the nature of an irritable, restless depression. As a rule, in the prostate group there is associated bladder and renal disease. The age of the patient, the associated general and cerebral arteriosclerosis, the faulty sclerosed myocardium with senile or worse changes in the kidneys, leads in operation, to shock and reflex disturbances in the cardiorenal mechanism. In this group the cerebral anemia with intoxication results in suspicional and delusional states usually of a persecutory nature.

A group of delayed psychoses or neuropsychoses after operation is due to operations on nervously exhausted individuals. By this I do not mean the introspective neurasthenic type, but rather the cases of actual nerve exhaustion. To illustrate: a man with gall-bladder or chronic appendiceal disease, continues to work at a position of strain and responsibility until he falls into bed, and into the hands of the surgeon. An immediate operation is done, say on the stomach or gall-bladder. The patient is listless and exhausted after operation, is anxious to be up and out of the hospital; and the surgeon, yielding, permits the patient to leave the hospital and return at his pleasure to his previous work and responsibility, with the result that the listless depression becomes accentuated, the patient becomes irritable, introspective, suspicious, fatigues easily on mental and physical exertion and eventually presents a clinical picture of irresponsibility, due to his split personality, that for all practical purposes is a psychosis, but in reality is a neurasthenic depression with hysterical and psychasthenic symptoms added to it. Such cases are very refractory to treatment, and take months of painstaking reconstruction treatment in order to get therapeutic results. If by chance, as sometimes happens, they fall into the hands of the surgeon for a new operation, this last state is so much worse than the first that the case becomes well nigh hopeless. This is the type of case, which in blind faith in the surgeon and medicine, submits to operation after operation, demands it indeed, until, as in one case, there was not enough noncicatricial tissue left on the abdomen to close up the last operation. There is, of course, the psychopathic patient who demands operation as satisfaction for a delusional state. It is not surprising in this case that the operation accentuates and renders acute a low smouldering insane state preceding the operation.

It is of more than passing importance that a patient presented for operation should be analyzed as to his or her mental state. It is quite understandable that a latent psychosis, or even an active delusional state might exist, and unless touched upon in the surgical history might easily be overlooked. To operate after warning of such a state is indefensible. An example of this was the case of a doughboy in a base hospital in France, who was supposed to have a brain tumor because a young officer, not an ophthalmologist, thought he saw a choked disc. Notwithstanding a diagnosis of the stupor of dementia præcox was made in this case, much to my surprise one morning I found this patient on the table about to be trephined for the brain tumor. It was only after the matter was referred to the commanding officer, an ophthalmologist of note himself, that the operation was stopped and his own eye examination revealed normal eye grounds. The further history of the case confirmed the mental diagnosis.

Secondary septic infections, especially streptococcic infections, both by their toxic action and by secondary effect on the heart, circulation and kidney—secondary shock effect, so to speak—become at times important etiological factors in the postoperative psychoses. Two cases of this kind have recently been under my observation, one in a woman of 30 operated on for ovariotomy, the other in a woman of 47, operated on for acute appendicitis in which the menopause was a possible factor. While in both cases an endocrine (menopause) factor was at play the mental picture in the two cases showed a decided contrast. In the younger woman the mental picture was that of an acute mania with marked physical activity, flight of ideas, screaming attacks, transitory delusions, etc. In the older woman there was listlessness, lack of interest, with lack of orientation as to time, place and personality, pathologic suspicion and delusions of persecution (systematized). In this case, in addition to a slight albuminuria and a blood pressure that fluctuated with the intensity of mental symptoms, there was a beefy, red, glazed tongue.

The latter case was an acute operation on a woman nervously exhausted after several years of exceptionally hard work in a position of strain and responsibility. In this group, i. e., where a gradual or precipitate menopause complicates the case, in addition to attention to the cardiorenal function, substitution glandular therapy is indicated. The value of antistreptococcic therapy is still under discussion. The prognosis depends to a certain extent on the severity of the streptococcic infection. Convalescence with some mental imbalance may be prolonged for weeks and even months.

Why this paper, with all its words, to a meeting of surgeons? One does not need to be a trained neurologist or expert psychiatrist to eliminate the operative risks in this field. I take it the present status of surgery, the hope of surgery, is to place the patient on the table with all risk of untoward complications eliminated. If a complication is likely to occur this need not necessarily prevent the operation; but the surgeon should know and the family be advised that certain complications may reasonably be expected, and that they diminish the percentage prognosis in proportion to their severity. This means much more careful histories than we see to-day in a survey of the histories of the surgical wards of our large hospitals. It means also a much more careful physical survey of the patient. It means, indeed, not only an estimate of the organic condition of the organs, but what is of more importance in relation to the subject under discussion, an estimation of the functional capacity of the heart, the kidneys, the liver and the nervous system.

In all this series of cases I do not remember one, when with the tragedy of a postoperative insanity to face, there was a record of the functional test of the kidneys preceding operation. Most often there was not even a blood pressure record, and in no case such a series of blood pressure records, lying, standing, after effort, etc., by which in a gross way, we are able to test the functional strength of the heart. Most often a statement is found on the chart that the heart is negative or that there are no murmurs. How often does the internist, when called upon to treat a postoperative pneumonia, meet the same difficulty in a lack of an expert study of the lungs before the patient is subject to one or two hours of the effect of ether on the heart, lungs, kidneys and nervous system.

The plain doctor is at a loss to understand why the record in a tonsillectomy, that should not take at the most over five, ten or fifteen minutes, shows the patient under ether for thirty or forty minutes or longer. In the ordinary case it may make little difference that the surgeon waits to scrub up and prepare after the ether is started and the patient on the table; but in the patient of low nerve tone, with cardiorenal imbalance it makes a very great difference, and where a shocking major operation is in question it may mean life or death or, what is worse, insanity. Adrenal insufficiency or constitutional diathesis or thymic death, is a poor explanation of sudden death after a tonsil operation, as was given in a recent case.

Modern surgery should not only have a survey of the organic and functional efficiency of the patient as a whole, but know to a certainty the state of the heart, circulation and kidneys, the organs bearing the greatest stress of shocking operation.

We as neurologists insist that, added to this, the nervous reserve of the machine, upon which for full functional efficiency these organs depend, should be estimated and considered not only before operation, but in a continuing way after operation. In low nerve reserve the patient should be kept at rest in the hospital on a "Wier Mitchell régime" sufficiently long to warrant operation without too much risk. The scientific rest treatment is one of the most valuable methods of rebalancing disturbances of heart and kidney functions. With old pulmonary lesions a temperature record will during this time be of assistance in determining whether there may be some activity that might decide the type and duration of the anesthesia.

In cases of low nerve reserve the patient should not be "shot out" of the hospital in seven or ten days, but should be kept for weeks if necessary, until the nervous system, the heart, kidneys, etc., approach an approximately normal functioning.

I may be permitted to say, in conclusion, that the surgeon of yesterday, who seeing a patient in his office to-day, ships the patient into the hospital and operates to-morrow morning at nine, has as little place in modern scientific medicine as has the neurologist or internist who on consultation of a half to one hour decides, on insufficient laboratory evidence, a matter that should take a week of observation. Clinical experience is of great value, but it never compensates for honest, hard work and investigation that leads to that complete knowledge which every patient has a right to expect for his own protection.

SUMMARY OF CASES

Case I. Mr. S. F. G. Age 39. Admitted May 19, 1921. Discharged July 10, 1922. Previous history of using alcohol in excess. Consulted Dr. Dorrance for fissure in ano. Showed some symptoms of mental disturbance before consulting us. Mentally clear when operation was decided on. Gas anesthesia used. Blood pressure before operation was: systolic, 122; diastolic, 78. Pulse 84, respiration 20.

After operation, during the first 24 hours the patient had twitching of hands and feet, and he complained of pain in toes. He had had this trouble for 2 weeks before operation. Forty-eight hours after operation he failed to recognize the physicians, nurses or his wife, and was confused mentally. Two weeks after operation the same symptoms were seen by the writer. During this time the blood pressure remained at 128—78 to 130—100. The urinary elimination was normal—1,500 c.c. for 24 hours. Urine negative. Specific gravity 1015-1029. There was never any albumin, diacetic or acetone. Wassermann negative. Feces negative. Blood count normal.

Case II. Miss A. B. Age 38. White. Admitted Aug. 10, 1920. Died Sept. 26, 1920. Patient admitted because of mental disturbance. She had been a case of ours and was sent in for study. A diagnosis of melancholia was made by Dr. Potts.

History: In 1917 she was operated on for ovarian cyst. Postoperative diagnosis was sarcoma. She made an uneventful recovery. In February, 1920, she was readmitted with fibroid of the uterus. Hysterectomy was done. The ovary was normal and was not removed. The pathological report of the uterus was carcinoma. She made a good recovery and was discharged on May 5, 1920. At this time the urine was always of high specific gravity—1020 to 1030. Albumin was present and there was a heavy urea content. The amount in 24 hours was 1,200 to 1,600 c.c. Blood count was normal and blood coagulation normal. Wassermann was negative.

At the last admission the patient felt that she had caused all her troubles by using a douche. The nozzle was large and she derived pleasure from the act. Now she felt that God was punishing her. She thought people were pointing her out as a bad woman, etc. Urine output was 1,200 c.c. in 24 hours, with no albumin, casts or sugar. Specific gravity 1015. Treatment: ovarian extract, bromides; forced liquid feeding. She committed suicide by jumping from window.

Case III. Mr. C. Y. Age 51. White. Admitted April 25, 1922. Discharged June 10, 1922. Diagnosis, hypertrophy of prostate. He gave a history of frequent urination—six to seven times at night. Dr. Kutter was catheterizing patient three times daily for two weeks before admission. The average amount of urine passed in 24 hours was 1,800 c.c. Urine showed albumin, but no casts, before operation; also a few red and white blood corpuscles in the field. The blood pressure was 150—100. Wassermann negative. Blood count normal. No mental symptoms were noted. He was operated upon April 26, 1922, using nitrous oxide anesthesia. The prostate was removed and a permanent catheter used. The patient was receiving urotropin, gr. x, t. i. d., and sodii bicarbonate, one dram in a glass of water every 2 hours, before operation.

The day following the operation the patient was drowsy. He vomited 8 or 10 times. Fifteen hundred c.c. of normal salt solution was given by hypodermoclysis 48 hours after operation. Patient was wildly excited. Salt solution, 1,500 c.c., was given under breasts every 12 hours. Intake by mouth was under 1 pint. Blood pressure was 150—80. We were unable to save urine, but the quantity appeared about normal. The urine showed a heavy cloud of albumin, R. B. C.

and W. B. C., but no casts. The catheter was removed. The patient continued to show mental symptoms. He had delusions of persecution and lost all sense of decency. The Murphy drip was instituted. Intake of fluids about normal on sixth day. Blood pressure 135—70. On the tenth day he was mentally clear at times. At this time he was seen by the writer, and digitalis was begun. On the fifteenth day the blood pressure was 110—70. He was mentally clear, improving gradually until the twentieth day, when he was mentally clear. The remainder of his convalescence was normal.

He was again examined on September 28, 1922, when the blood pressure was 120—75. He was feeling well, had no urinary symptoms and was mentally clear.

Case IV. Mr. H. McC. Age 68. Admitted April 28, 1922. Died June 12, 1922. On admission a diagnosis of hypertrophy of bladder complicated with myocarditis was made. He had been catheterized daily for a week. The urine was loaded with albumin; few hyaline casts in field. He was mentally confused. The amount of urine in 24 hours was 1,000 c.c. Urotropin and sodii bicarbonate were given for 24 hours. On April 29, 1922, suprapubic drainage was instituted under local anesthesia. The patient became mentally clear in 48 hours and did well surgically. The blood pressure was 150—75. On May 1st, under local anesthesia the prostate was removed and a catheter inserted. He did well for one week; then pulled his dressings off, tried to get out of bed, and became mentally confused, although he always recognized his friends and family. He became gradually weaker from July 8th to 12th; removed all his dressings; attempted to get out of bed, and had a severe hemorrhage from the prostatic site. The urinary output was low. Blood pressure 150—70. Hypodermoclysis, 1,000 c.c. daily, was instituted, and enteroclysis was started later and continued for 4 days. He grew weaker daily and was unable to recognize people, constantly talking irrationally. He died June 12, 1922.

DISCUSSION

Dr. John L. Atlee (Lancaster): The Section on Surgery owes Dr. McCarthy a debt of gratitude for presenting this subject to us. I think he has opened up a matter of very great moment to every surgeon and the discussion of the problem can be approached from a great many different angles. I think the one keynote that is to be taken from his paper for the practical working surgeon is the note of better preoperative study of surgical cases. I have for a long time felt that every surgeon should have an ideal—an ideal, I admit, that he cannot reach—that ideal being that there should be no postoperative deaths. Theoretically our judgment should be so good that when recovery will not ensue the operation should not be performed. Dr. McCarthy's paper makes me feel that we should go further and say there would be no unforeseen postoperative complications.

How this matter is practically to be accomplished is a very big problem. As Dr. McCarthy says, it is not a matter of half an hour or fifteen minutes for preoperative study; it is very often a question of a week, and a week not only of one individual, but of a number of individuals trained in the different lines. No one man can complete the examination. Furthermore,, as our hospitals are ordinarily conducted, a week's preoperative study very often does not increase the patient's equanimity.

It is a question, too, whether it is really the surgeon's business. Very often I have been told that "the surgeon is not careful enough in his preoperative examination." I think it is fair to ask whether it is our business. The buck has been passed to us and we have accepted it and study our cases to the best of our ability, but it is really the province of the family physician, or of the internist, to study that patient's mechanism, not of the surgeon. And I do not think that it is fair for the family physician, who has attended a case and family all of that patient's life, to send him into the hospital with the diagnosis made, the recommendation that the patient is nervous and cannot spend time in the hospital and to operate immediately, please, and then blame the surgeon for the unforeseen general condition. As I say, we have accepted the responsibility and we have done the best we can, although it is really not our business. I think that the family physician should accept more of the responsibility for the question of the preoperative condition.

Dr. McCarthy's remarks on the question of postoperative insanity being largely of cardiorenal origin or a chronic infection, apply, I think, with peculiar force. Only recently I had a prostatic patient who apparently reacted very well to all his tests. I did not take a blood urea; everything else seemed all right. After operation he developed a confusional psychosis. Then we took a blood urea and found it three times the normal. In this case I felt that a better preoperative study would have saved the patient from an operation at that time.

Working in a smaller community, these problems have appealed to me with a great deal of force. I think even the smaller community can solve them in time. It seems to me we should have a preoperative department in the hospital. Certainly the acute surgical wards are no place for patients awaiting operation. If we could have separate wards, a separate part of the hospital, probably on the medical side, for these cases awaiting operation, it would be far better.

Another practical point, it seems to me, is that each of us in the smaller communities tries to do everything. If the younger men could get together, each of them selecting a special line only, one choosing heart and kidney, another the lungs, another pediatrics, another neurology, another psychiatry, etc., in five years it would not count, possibly in ten years it might not count much, but in fifteen or twenty years even the smaller community could have a group whose opinion might be well worth considering.

I want to express my appreciation of Dr. McCarthy's paper.

Dr. Judson Daland (Philadelphia): The subject Dr. McCarthy brings up for discussion is of very great importance. In general my experience agrees with his. It seems to me he has pointed out something comparatively new. The great importance of recognizing grades of the chronic type of infection and their relationship to surgery is important and diverse. He pointed out in no uncertain voice the importance of renal insufficiency. He has made clear the absolute necessity of preoperative study in order to avert serious injury to the nervous system. It is evident that in most cases the operation could have been deferred until the patient's nervous system could be improved by medical treatment, so avoiding postoperative complications.

I should like to draw attention to the evil effect upon the nervous system of postoperative pain unrelieved by treatment. I do not know the reason, but it is nevertheless true, that surgeons in general are opposed to relieving postoperative pain. I suspect that this erroneous view is widespread and that it is true of a number of surgeons in Philadelphia, Baltimore and certain cities in the Middle West. It is just as important for the surgeon as the physician to relieve pain if there be no important contraindication. I recall a neuropathic patient that suffered extreme pain after an operation for hemorrhoids. The surgeon gave no remedial relief, although there was no contraindication, and in consequence confusional insanity followed for some months. This complication was entirely unnecessary, and could have been avoided. This subject should receive the serious consideration of surgeons.

I was much interested in Dr. Atlee's discussion as to whether it was the job of the surgeon, the internist or the practitioner to decide when an operation should be postponed so as to avoid postoperative insanity. The surgeon must be in possession of all the data regarding the patient *before* operating in cases where there is no urgency, and must decide whether he or the practitioner or the internist is to make the necessary examination. If a patient suffers from an avoidable postoperative insanity, the responsibility is the surgeon's.

Dr. Charles S. Potts (Philadelphia): I can endorse in a general way everything that Dr. McCarthy has said. I think possibly, though, from the practical standpoint, that some of his views as to what should be done might be difficult to carry out in all cases. To keep a private patient in the hospital for two months preceding operation might involve more expense than he could stand, and in the case of ward beds, to do that with a large proportion of your patients would swamp the hospital. To carry out these recommendations would involve a large increase in hospital facilities and endowments.

I should like to emphasize what he said about seriously considering the advisability of operating on so-called neurasthenics. Of course, in a certain proportion of these patients their trouble is really due to some surgical condition, yet at the same time we often see patients of this type, pure exhaustion neuroses, who have some slight surgical ailment, operation for which could without danger be postponed or not done at all. The patient is operated upon by the surgeon, with the result that the general condition of the patient is made much worse.

In reference to what was said about the case of hemorrhoids which Dr. Daland mentioned, it has been my experience that operations for hemorrhoids seem to be especially prone to cause neuroses and psychoses. I do not know why this is, but so far as my experience goes it is true. When we consider the vast number of operations performed, the number of cases of insanity following operation are not very great; but there is no doubt that they do occur and there is no doubt that the possibility of their occurrence should be taken into consideration. If the operation is not undertaken for an acute condition and where it is not a question of life or death, patients should be studied from that standpoint, as well as others.

Dr. Charles E. Thomson (Scranton): Unfortunately, I did not hear Dr. McCarthy's paper, but my experience with postoperative insanities has been that they come to us like a thunderbolt out of a clear sky. At least, personally, I have not been able to anticipate them nor give any good reason why they occur, any more than that, as we of course know, shock does produce these conditions and that most of our operations are accompanied by considerable shock both as to effect of the operation and of the anesthetic. I should like to ask Dr. McCarthy what influence he attributes, if he has not already so stated, to the anesthetic? I have always believed that the anesthetic was responsible for a good many of these symptoms.

Dr. Donald Guthrie (Sayre): I am very much surprised that Dr. McCarthy did not take us more to task, in fact scold us surgeons a little, for the wretched results that we get in many of our surgical cases. I think it is our tendency to deceive ourselves in many instances, when the patient's wounds heal up and he leaves the hospital, to score a perfectly satisfactory recovery to our credit. If we were neurologists or clinicians we would find that a great many of these patients' recoveries are far from satisfactory and it is into the hands of men like Dr. McCarthy that our bad results fall.

I am particularly interested in one phase of his subject: not so much the acute manias which develop soon after operations, but the unfortunate psychoneurotic states that many surgical patients develop after they leave the hospitals. I believe that we could do a great deal to prevent many of these things from occurring if we gave a little more attention to the internal organization of our hospitals. In other words, we need better coöperation between the superintendent, the medical staff and the head of the training school. It is with coöperation of this kind that many of our hospitals could be warmed up; the arrivals would be robbed of a great deal of fright which they have when they come into the hospitals and which they experience all during their stay.

Just what is wrong radically with many of our well-run hospitals? Why is it that in the high percentage of patients who leave these institutions recoveries are far from satisfactory? I believe we lose sight of a very valuable thing—that we should consider every patient who comes into our institution as a mentally as well as physically ill individual. I think the welcoming of our patients is extremely important, as is the handling of the patients' families by the business office. I believe it would be well to give our wards very careful attention, because it is the patients in wards who suffer more than those in private rooms.

I think the administration of the anesthetics is one of the great causes for postoperative psychosis.

I should like to have Dr. McCarthy tell us, when he closes, whether he thinks the emotion of fear that so many of these people have during their stay in our institutions is any factor in the production of these psychoneurotic states that he sees after our unsuccessful operations.

Dr. W. Wayne Babcock (Philadelphia): I have had little experience with the type of postoperative insanities considered by Dr. McCarthy. Most of the cases I have seen have followed marked sepsis or toxemia, have occurred in alcoholic or drug addicts after injury, or have resulted from injury to the brain. Obviously these patients presented emergency conditions and are not amenable to prophylactic treatment. Dr. McCarthy has described patients who have had some very serious suppurative condition and have developed before or after operation delirium or delusions, but have pulled out mentally clear, provided they survive the infection.

We, of course, see a class of patients with psychoneurotic manifestations, associated with a desire for repeated operation. Some of these patients have been quite a pest in our surgical wards, making every endeavor to reënter the hospital and have repeated operations performed. One girl, who had started her hospital career with a suppurative appendicitis at the age of eleven, when she reached us had had twenty-six operations. This time she complained of a fecal fistula in the center of an enormous abdominal scar, from which she asserted laxatives or enemas promptly escaped. Later she convinced the nurses that she could vomit an enema three minutes after it was given. It required careful watching to discover how she caused the enema apparently to come from her mouth. She continued her operative career in other institutions, dying after her thirty-ninth operation. Some of these patients irritate their old scars to produce hemorrhages with the hope of persuading the surgeon that further operative treatment is necessary. Mentally they are, of course, abnormal.

The prevention of postoperative insanities by preoperative treatment is unquestionably very important. At the Samaritan Hospital patients enter through the medical service, where they are thoroughly examined and, unless there is some emergency condition, are not admitted to the surgical wards until carefully studied. Possibly this has eliminated our experience in postoperative insanities.

The subject is a broad and very important one and has many ramifications, as in thyroid diseases and other metabolic disturbances. We should be very grateful, and I wish to express my appreciation of Dr. McCarthy's work in this field.

Dr. McCarthy (in closing): In reference to whose duty it is to have this proper survey, I take it that the family who turns a patient over into the hands of a surgeon is putting the life of the patient, like a jewel, into his hands. If he has not information sufficient to eliminate operative risks it is his duty to get it. If the patient is a member of my family I hold him absolutely responsible. If he is not competent to get it himself it is his duty to get others to do it for him; it is no excuse for him after the patient develops some postoperative complication that he did not know. It was his duty to know. Nobody can relieve him. He cannot pass the buck; no one can relieve him of responsibility.

Down in my service in St. Agnes I have succeeded in getting a surgeon who will take a high-strung, nervous girl of 10 to 16 years of age, and do an operation in her room. Why should he want to take a sensitive, nervous patient from her home and say, "You are to be operated to-morrow morning;" she is shot into an operating room and the child is scared to death. The rest of that girl's life is influenced by it; by all the fear and fright of the operating room, all the conditions attending the operation, the groaning of patients; other patients dying during the night, etc. A very sensitive girl of 16 or a woman of 60 with high-strung, nervous temperaments, cannot be taken as could a cowboy. What we try to do at St. Agnes is to have this nervous, sensitive patient anesthetized in her room in a quiet way, if necessary giving morphin as a preliminary to quiet her down, and when coming out of the anesthetic to have a sympathetic nurse, not some brute of a nurse who will scare the life out of her—I mean by preparing the patient by the atmosphere of your hospital and giving some thought to the fact that this is a sensitive nervous system, different from the workman who does not "give a rap" one way or the other. One should estimate the patient's nervous reserve and fear sensibilities all through the operation.

As to anesthesia, when you have low nerve reserve the difference between one and a half hours of anesthesia and fifteen minutes makes the difference between life and death. It depends not only upon the heart, but upon the batteries behind it.

When it comes to scolding, I could scold the surgical section, as Dr. Guthrie says, but I would call attention to what Dr. Guthrie is doing at Sayre in operating on human beings and to ask you to remember that you have something more than a tumor in the abdomen; you also have a heart and nervous system.

ACUTE EMPYEMA OF THE THORACIC CAVITY*

ELLIS C. WINTERS, M.D.

FORD CITY

During the fifteen minutes given for the reading of this paper I shall consider acute empyema only.

From the etiologic standpoint cases of acute empyema are divided into three groups: 1, those which have been preceded by a definite pneumonia; 2, those in which even pneumonia may have been present but in which it could not be demonstrated, being hidden by the early and rapid accumulation of the fluid in the plural cavity; 3, those not preceded by pneumonia.

Bacteriologically I will divide acute empyema into three groups: 1, pneumococcus; 2, streptococcus hemolyticus; 3, tuberculous.

Great care should be exercised in the diagnosis of empyema as well as in differentiating to which one of the three bacterial groups it belongs, as the treatment is vastly different in the different groups, consideration of which will come later. I want to stress at this time the importance of coöperation between the surgeon and the medical man, the x-ray department and the laboratory, not only before operation but during convalescence. The value of the x-ray cannot be overestimated. The movements of the thoracic contents and the diaphragm can be determined with a screen. The roentgengrams show the approximate amount of fluid and the presence of pneumothorax, the degree of collapse of the lung, the position of the heart and mediastinum, also the level of the diaphragm and the presence of tuberculosis. Probably the greatest use is in cases of so-called encysted empyema. We may thus be able to find the accumulation of pus as well as to determine its position. Repeated examinations are sometimes necessary after operation. The history plays an important part in making the diagnosis. One should always be suspicious of the pneumonia patient whose temperature comes down to normal, stays there for twenty-four hours and then begins to rise.

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*Read before the section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 3 1922.

In physical examination the most reliable sign of fluid is the absence of tactile fremitus. In every case where physical signs point to fluid, an aspirating needle should be introduced into the suspicious area, observing the strictest aseptic technique. Often the needle used is of too small lumen, causing real thick pus or pieces of organized fibrin to obstruct the needle with a resulting "dry tap." The fluid should be sent to the laboratory and examined for organisms. If not sterile the organism should be determined and the patient treated accordingly.

Those showing a pneumococcic infection should be drained by rib resection without delay. Those with a streptococcus hemolyticus infection should be aspirated. There is usually great improvement in the patients' condition following aspiration. They are less toxic and the respirations are easier. The fluid will re-form and aspiration will have to be repeated, usually after three or four days. After two to four aspirations the patient has, as a rule, sufficiently improved that a rib resection can be done. If a diagnosis of tuberculous empyema has been made, no drainage should be attempted. If the accumulation of fluid is so great as to embarrass the action of the heart, then a portion of the fluid can be taken away by aspiration. If drainage is started there will likely remain a discharging sinus which will not heal.

The greater part of the writer's experience with empyema was gotten during his military service both in the States and overseas. The type of these infections following measles and influenza was probably the most virulent we will ever again encounter. It is to be hoped so at least.

The operation of choice is thoractomy with resection of one rib. Care should be taken to outline the location of the fluid, either shortly before operation or on the operating table just before starting to operate. Then go in at the most dependent point of this area, thus insuring the best drainage. When the fluid occupies the base of the pleural sac, as it does most times, I prefer resecting either the eighth or ninth rib in the posterior axillary line. This operation not only affords the best possible drainage but permits the operator to palpate and if necessary to break down and look for pus cavities. Pus seems to possess a selective property to localize itself, a very frequent location being the interlobar space.

I prefer local anesthesia of 1% novocain and in some cases have used light chloroform. Some prefer nitrous oxide in adults.

Dakin's solution (.5%) was used in the after-treatment. This was not used on the operating table because of the possibility of a bronchial fistula. If there is no evidence of a fistula at the end of twenty-four hours irrigation is begun. The regular Dakin tubes were placed at time of operation. They should reach every recess of the cavity. The irrigations were used every third hour and at time of the daily dressing. The results derived from the use of Dakin's solution are: 1, lessened toxemia; 2, the discharge becomes less purulent; 3, it dissolves out the fibrin masses, thereby lessening adhesion formation; 4, the cavity becomes chemically sterilized in a much shorter time, thereby shortening the convalescence period.

Cultures should be taken from time to time. These cultures should be taken from different sections of the cavity. After two sterile specimens have been gotten which have been obtained twenty-four hours after irrigations have been stopped, the wound can then be closed by secondary sutures.

In treating these cases, our first object is to get good drainage, and our second to get expansion of the lung. Before the patient is able to leave the bed, expansion of the lung can be facilitated by use of "blow-bottles." The unaffected side should be strapped with adhesive plaster to avoid production of emphysema of the unaffected lung. As soon as convalescence begins the patient should have fresh air treatment —more than before—and "setting up" exercises with special effort to promote deep breathing and lung expansion.

I have never made use of any of the suction or negative pressure appliances, for they have not seemed necessary. Warbasse says, "It is doubtful whether any of the schemes for valvular protection and drainage give better ultimate results than the uncomplicated tube." I wish to quote Hartwell, "This negative pressure has been obtained by elaborate apparatus. It has had a very thorough trial by many competent men and has met with some success. More often than not, however, it failed to accomplish the required end, either because the connection through the chest wall did not remain air-tight or drainage was incomplete." Graham and Bell have proved experimentally, and have demonstrated that an opening two inches by four inches can be borne without complete collapse of the lung.

The most frequent cause of chronic empyema is poor drainage. Therefore, let us establish and maintain the best possible drainage in our cases of acute empyema.

In conclusion, I wish to emphasize the importance of an early diagnosis; coöperation between the medical men, bacteriological and x-ray laboratories; use of the Carrel-Dakin solution, with good drainage and promotion of lung expansion.

2-7 Scheeren Bldg.

DISCUSSION

Dr. T. Turner Thomas (Philadelphia): Five minutes is a short time in which to discuss empyema, so that I shall limit myself to one phase of it—dependent drainage. This is an ideal towards which we have been moving for many years. Most surgeons at the present time come down probably only as far as the seventh rib, some to the eighth, and a few to the ninth. In most cases the cavity extends as low as the eleventh rib near the spine. For more than ten years I have been placing the drainage tube at the bottom of the cavity, usually in the eleventh interspace; sometime, by resection, on the eleventh rib; higher, only if the cavity does not extend this far down. Of course, in the small, so-called localized empyemata, I am glad enough to strike the cavity wherever it is. In the common massive parietal empyema the pus, in proportion to the quantity present, pushes the lung and diaphragm well away from the chest wall, rendering the making of an opening at the bottom comparatively easy and safe, provided ordinary care is observed. No one fears to make an opening opposite the seventh rib in the average case.

The elder Ashhurst, through an opening at this level, introduced a "steel-eyed probe, bent like a sound," with the end of which he located the bottom of the cavity and made another opening there for drainage. A. C. Wood, after resecting the ninth rib and finding the cavity extending lower, resected the tenth and eleventh ribs successively and placed the drainage tube at the bottom. Binnie, after making an opening at the level of the fifth or sixth rib, passed his finger or a forceps through, thus locating the bottom of the cavity, where he made a second opening for drainage. I have in many cases (and make the practice uniform unless there is a distinct contraindication) first made a stab opening with a bistoury at a safe level through which is passed a grooved director bent at the tip. After locating the bottom of the cavity the tip is turned toward the skin in an interspace, an opening is made on it and a drainage tube introduced through it.

To justify an opening at the seventh rib it has been held (Fitzwilliams) that the empyema cavity is probably deepest at this level and consequently the reëxpanding lung reaches the chest wall last here. A drainage opening lower down would, therefore, be closed by the expanding lung before it had reached the chest wall higher up, thus leaving an undrained pus pocket. According to my experience this is not true, since I have been placing the drainage tube in the bottom of the costophrenic sinus and have never had trouble from such an undrained pus collection.

I prefer to believe that the last portion of the lung to reach full expansion is that opposite the site of the drainage opening. The great factor in retarding lung expansion is the atmospheric pressure admitted through the opening in the chest wall made for the evacuation of the pus. The great problem here is to neutralize this new pressure, to let the pus out freely enough and to make the entrance of air as difficult as possible. To the last this atmospheric pressure must be most effective where it enters. The obstruction offered to it by the escaping pus in the lumen and around the tube is favored by an opening at the bottom of the cavity. The higher opening made to facilitate the making of the second or lower opening should be closed. It will not evacuate pus and will too freely admit air. It is, therefore, an error to practice through and through drainage by a tube passed from the higher to the lower opening. The same atmospheric pressure which keeps the lung away from the drainage opening to the last keeps the diaphragm away also and prevents it from blocking the tube.

Dr. Levi Jay Hammond (Philadelphia): It is not easy for me to discuss profitably a subject the very essence of which has been so fully set forth, and equally difficult after having listened to so brilliant a discussion. However, in mere matter of detail there seems just reason for differences in this, as in all other medical problems. For example, we will agree that rib resection is the logical procedure and advantageous from the standpoint of giving access to satisfactory exploration in a collection of pus and where large flakes of lymph are present or multiple pockets of pus are suspected, yet my experience has been that it is not at all essential to resect the rib in those acute instances unless the ribs happened closely to approximate each other. Of course if such condition exists resection is essential to avoid collapse of the drainage tube from pressure. In very small children I frequently do not resect. That is also true in adults where approximation of ribs is not so close as to interfere with drainage.

I, too, feel that drainage should be established at the most dependent part of the abscess cavity and practice that faithfully, largely from the persuasion of my distinguished friend, Dr. Thomas. But a few months ago I was asked to see a chronic empyema—I am not going to discuss chronic empyema, except to illustrate by an isolated instance the unwisdom of establishing drainage too near the displaced diaphragm. The drainage had been established immediately above the diaphragm, which had been displaced downward far below its normal level by the intrathoracic fluid. On the removal of this the diaphragm was shortly returned to its normal position and, of course, inadequate drainage resulted from the diaphragm plugging the original drainage tract. While it is essential to go near to the base of an abscess, we should not, when the abscess is so clearly immediately in contact with a displaced diaphragm, go so near as to have it interfere with drainage, but rather establish drainage immediately above the position normally assumed by the diaphragm, say the seventh or eighth interspace in front of the long muscles of the back. There the diaphragm, in returning to normal position, will not interfere materially with drainage.

Again, a matter of detail is the question of irrigation. I attempted irrigation after various empyema commissions had reported favorably upon it, and I soon found that I was not receiving the same amount of benefit from that sort of treatment that it seemed reasonable, judging from the report, to believe should follow. I therefore discontinued irrigation in acute emphysema. I can see no reason for it. The fundamental principle is to establish and maintain drainage; and irrigations will almost surely cause increased irritation and perhaps prolonged irritation in the pleural cavity. In addition to this I have believed it broke up the delicate adhesions that immediately form after the fluid has been removed between the visceral pleura and the thoracic pleura. That is a desirable condition to secure because we have by such means a limited pneumothorax, the lung remaining in a condition of expansion.

In almost every respect other than these I feel like endorsing what has been so well said by the essayist.

Dr. William L. Estes (Bethlehem): I had not intended to discuss the subject, but in the course of a great many years' work I have had occasion to treat a good many empyemata. I think the points by both the essayist and the first speaker in the discussion were well taken. I should rather, however, feel inclined to criticize Dr. Thomas' suggestion always to make the incision at the eleventh rib, and the using as an illustration, as he did, of an old case which had gone on evidently for a great many weeks, perhaps months, in which the diaphragm had by pressure been driven down far beyond its normal position. To advise operators, especially young men without experience, always to open at the eleventh rib, is unsafe. To make the opening so far down may result in many cases in serious difficulty and danger. An inexperienced operator may not recognize the diaphragm from plastic adhesions and may go through the diaphragm into the peritoneal cavity, and so form a way for the pus to get into the peritoneum. It seems to me the proper thing to do in these cases of empyemata is to drain at the most dependent part of the pleura in the individual case, and the individual case must be judged by physical signs, or fluoroscopic or x-ray indications.

Dr. George M. Dorrance (Philadelphia): In acute empyema you want to be sure to get the pus. If you introduce your needle and are not able to get the pus and you are sure the pus is there, make a sufficiently large opening low down, so that you can introduce your hand; then you will be able to separate the adhesions and open the abscess cavity and, if there is more than one, to divide the partition and make one cavity. If it is an intralobar abscess, you will be able to open it with ease and will not have the re-collection of pus that is so common. In the Children's Hospital of Boston, in one of the surgical services, they break up adhesions in all cases of empyema. I am glad to hear Dr. Winters emphasize the point that one should not drain a tuberculous empyema, that they should be tapped under the most aseptic precautions; for if an empyema is drained, many subsequent operations will have to be performed, and the mortality rate is high in tuberculosis as soon as mixed infection is introduced.

STATE CONTROL OF SYPHILIS*

S. LEON GANS, M.D.

HARRISBURG

Pennsylvania's effort to decrease the incidence of venereal infection, particularly syphilis, is based not only upon the experience of those in Pennsylvania, but upon that of all others engaged in the work. It has been the Department's endeavor to use every means at its disposal and not to center upon one line of attack to the exclusion of others. Effectually to clean up the inmates of houses of prostitution, it was necessary to provide places where patients, through proper treatment, could be detained and rendered noninfectious or cured. Local authorities were asked to provide houses for quarantine purposes. After these facilities were obtained and only then, were legal measures used to close houses of prostitution.

Measures used are: (a) Medical, (b) Educational, (c) Law Enforcement, (d) Rehabilitation.

Medical measures are: (1) Approval of the use of the "Immediate Disinfection" packets. (2) Clinics for treatment, supported by the state and communities.

Manufacturers of immediate disinfection packets submit samples of their product to the state laboratory and, having passed the bactericidal test, are given the state laboratory approval. They are on sale in drug stores. The state maintains 51 clinics. There are 153 coöperating clinics, 30 detention homes and one institution for 400 babies. Patients presenting themselves to state clinics, if able to pay for treatment, are referred to physicians or to a pay clinic in hospitals. County medical societies have been asked to make a minimum fee for the treatment of venereal diseases. If the patient is able to pay at least this fee he is referred to a physician, who makes his own financial arrangement. If indigent, he receives free treatment. In the case of a patient who is referred to a physician, the physician is asked to keep the clinic informed as to the patient's attendance for treatment. If the patient neglects treatment, the Department compels him to continue it until rendered noninfectious.

In the state clinics during the past year, there were treated 3,318 new cases of syphilis and 2,986 cases of gonorrhea. The number of gonorrhea and syphilis patients rendered noninfectious or cured was 4,567. A patient presenting himself to a clinic is questioned as to the source of infection. If the name of the source is obtained, he or she is sent for, examined, and if infectious, treated. During the year there were 2,755 detected and treated. Refractory cases are quarantined. In some of the rural communities, physicians are supplied with free drugs by the state for the purpose of giving treatment to indigent patients. A patient, having enrolled in the clinic, is followed up until rendered noninfectious or cured. The right of quarantine which the state exercises is effective in the control. Approximately 2,400 patients were quarantined during the year, the technique being the same as that used for any other communicable disease.

Educational: There are seven lecturers employed by the Department in presenting the subject to groups of people such as medical societies, women's clubs, chamber of commerce and similar organizations. In presenting the subject, motion pictures, pamphlets, and exhibits are used. In the past year, approximately 20,000 people have been addressed.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

In five state clinics a free postgraduate course on venereal diseases is given to the profession. There were 119 physicians in attendance, this being the capacity of the clinics. A sufficient number, however, have been enrolled to require the instruction being continued for more than a year. A treatise on diagnosis and treatment of syphilis has been prepared by the Division and sent to all the physicians in the state—this for the purpose only of suggestion as to the basic principles. The treatment of a syphilitic patient calls for the same consideration as one suffering with typhoid.

Law Enforcement: The old practice of closing houses of prostitution and scattering diseased persons throughout the country has been discarded. Proper places for detention and treatment provided for, are the logical means to prevent spread of disease. The Department of Health provides medical and nursing personnel as well as equipment and medicine for the treatment of patients detained. Here they are kept in strict quarantine until they are noninfectious or cured. The fact that patients of this character are prone to revert to their former unwholesome practice is not lost sight of. Rehabilitation methods are successfully practiced. The state police have been made health officers. This organization has been an effective ally in closing houses of prostitution, bringing back to the clinics patients who neglect treatment and in detaining those who have broken quarantine.

A prostitute is considered as having the same relationship to venereal infection as the typhoid carrier has to typhoid fever. When a prostitute is detained, it is done under the health laws, and in this way bail is eliminated. The Abatement and Injunction law prevents owners of property from using it for immoral purposes. The state has been able effectually to stop the use of notorious places for purposes of prostitution. During the past four years laws have been enacted which permit patients to be quarantined when the character, occupation, habits or neglect of treatment and method to protect others, make them menaces to the public health. Another law provides that all persons in penal institutions, including those awaiting trial, must be examined, and if found to be infected with venereal disease must receive treatment. Acts of 1870, 1919 and 1921 prevent the advertising of venereal nostrums. The Department of Health has secured conviction in the courts of several advertising quacks, and licenses to practice have also been revoked. This has had a deterrent effect upon others. Stickers and signs advertising venereal nostrums have been practically eliminated from the state.

State Department of Health.

STATE CONTROL OF DIPHTHERIA*

J. BRUCE McCREARY, M.D.

HARRISBURG

The present status of diphtheria in the State of Pennsylvania has been determined by a study of the circumstances surrounding the deaths from this disease, during the present year. A further study of the recovered cases gives us additional data upon which to base an intelligent plan of control.

The average death rate per 100,000 population in 15 years is 74.6. The total number of cases in 1920 was 16,959 with 1,733 deaths. The total number of cases in 1921 was 20,784 with 2,032 deaths. To date we have had in 1922, 8,561 cases with 761 deaths. The average number of cases per year for the last 15 years is 14,591, with 1,277 deaths. There is an average death rate of 8.7%. The present death rate is 8.9—practically unchanged for some years.

In our study of this year's cases, it is shown that the average age of the victims of the fatal cases is 3½ years, of the recovered cases, 12½ years. Sixty-three per cent of the fatal cases represent lost opportunities for cure. An average delay of 4.5 days in securing medical services is recorded, while there was an additional delay of more than 48 hours in making a diagnosis in 17% of the fatal cases. Ten per cent of the fatal cases did not receive antitoxin. In the recovered cases, the average time of securing medical services was 1.1 days, and but 11% failed to be diagnosed on the first day. Nineteen per cent of the fatal cases were primarily laryngeal, while 22% involved the nose.

The average time in which the doctor was called in those cases involving the nose was five days; whereas, in the cases involving the larynx, the average time was the second day. This, while it emphasizes the fact that diphtheria of the nasal passage is often overlooked, accentuates the need of culturing all children showing a running nose, even if there be no other indications of illness.

Eliminating those cases which did not receive antitoxin, the death rate drops to between 6 and 7%. The death rate is immediately cut to 2% in those cases receiving antitoxin in the first 36 hours of the illness and to less than 1% in those cases where antitoxin was administered immediately upon the first clinical manifestation.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

	Deaths	*Recoveries*
The average initial dose of antitoxin	12,000	10,000
The largest initial dose	60,000	40,000
The average total dose was	25,000	27,000
The largest amount was	200,000	160,000

The intramuscular method of administering prevailed. A small proportion was given intravenously, but by far too many physicians gave antitoxin, as a curative agent, subcutaneously.

While an average total dosage of 27,000 units has been given our diphtheria cases as a curative agent, there has been temporarily immunized in the state an average of one person to each case of diphtheria. This record includes only those having used state antitoxin.

The foregoing figures emphasize the fact already apparent that the chief factor in our failure to control diphtheria is the lack of appreciation on the part of the public as to the value of early and specific treatment in diphtheria and the value of prophylaxis.

Active as have been our efforts to control diphtheria through laboratory study and diagnosis, isolation of cases and carriers, free antitoxin and immunization by antitoxin, the morbidity figures remain about the same. So, too, does the death rate. Both can be and should be lowered. Definite rules followed, will speedily lessen the death rate. First: Antitoxin should be given at the onset intramuscularly, and in a sufficiently large single dose; in severe or late cases, intravenously. Second: The usual precaution against cardiac failure should be followed out; rest in bed proper diet, hygienic environment, etc.

Contacts should be immunized with antitoxin in 1,000 unit doses given subcutaneously, isolated and cultured, and released only upon negative reports.

Persistent carriers should be found by testing and if virulent should be quarantined. The throat and nose specialist will clear many of these.

Some children and most adults are immune to diphtheria. The Schick test to determine susceptibility is reliable and constant. It is accomplished by the intracutaneous injection of 1/50 of an MLD of diphtheria toxin in a normal saline solution. A control injection is used at the same time on the opposite arm. The flexor surfaces are to be preferred. The procedure is harmless, creates no reaction other than the local discoloration and slight desquamation of the skin. There is no sore, scab or subsequent cicatrix.

If the children are shown to be susceptible to diphtheria, they may be permanently immunized with toxin-antitoxin, a mixture of toxin and antitoxin, wherein the toxin is slightly underneutralized. Antitoxin immunity is passive and transient. Toxin-antitoxin mixture establishes the development of antibodies which are permanent. This mixture is given in three weekly doses. Complete immunity is not established for some weeks subsequent to the completion of the treatment. Treatment by toxin-antitoxin does not contraindicate curative doses of antitoxin, should the disease occur before the establishment of complete immunity.

Anaphylaxis, while rare, does occur in those persons sensitized to horses and horse serum and in the asthmatic. These persons should not have full initial doses of antitoxin nor T. A. T.

In the presence of diphtheria, the first dose should be 1/10 of a c.c. of antitoxin, repeated in a half-hour, and thereafter the full dose given slowly.

Should anaphylaxis occur in those persons where a history of the idiosyncrasy has not been obtained, the treatment should be 5/10 of a c.c. to 1 c.c. of a 1 to 1,000 adrenalin solution intramuscularly.

Universal application of the Schick test and permanent immunization by T. A. T. would control diphtheria, as universal vaccination against smallpox has controlled that most repulsive disease. It has been found that such a large proportion of children of pre-school age are susceptible that all should be immunized.

If the public can be educated and the physicians of the state persuaded to adopt the practice of permanent immunization, we shall have in ten years a school population practically free from diphtheria.

State Department of Health.

STATE CONTROL OF PUERPERAL SEPSIS*

EDMUND B. PIPER, M.D.

PHILADELPHIA

When your committee first asked me to speak at this meeting, the title given me did not have the word *State* in it. I accepted and only found out after the publication of the program that I was supposed to speak upon the "*State* Control of Puerperal Sepsis."

Had I known at the beginning that this was the title, I should have declined, because I do not believe that state control in the true sense of the word is either practicable or possible at this time.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

Some day, possibly in the dim Utopian future, when we shall be blessed with laws governing what we shall eat as well as what we shall drink and other minor details such as the clothes we wear, then possibly state control of puerperal sepsis and allied conditions may be feasible.

In taking a stand of this kind, I am speaking of state control exercised in a similar manner to the federal control in the Harrison Act. There are two basic reasons why at present this is not possible:

First—Owing to the propaganda, which has been in operation over a period of many years, it has become the fixed opinion of the lay public that *all* cases of puerperal sepsis are due to errors on the part of the obstetrician in charge. Although we know there is a large element of truth in this propaganda, we know also that in its entirety it is false. However, it exists in the lay mind and as long as it exists, no man, particularly one practicing in a small community, feels like advertising the fact that he has confined a woman who developed puerperal sepsis. Even though he knows in his heart that he is innocent of infecting that patient, he would feel great hesitancy in diagnosing this condition and reporting it.

Second—Who is to differentiate between puerperal sepsis and puerperal infection? The clinical picture of puerperal infection and of sapremia (if you choose), of puerperal sepsis or puerperal septicemia resemble each other very closely. Would it be deemed necessary to report a case of local infection of the lower birth canal following infected stitches? Is a breast abscess reportable? Would you blame the doctor for the lighting up after childbirth of an old gonorrheal infection? Must all cases have blood cultures to prove that they have or have not puerperal septicemia? If it is difficult for those of us in hospitals, with the best possible means of studying cases, to arrive at a diagnosis, how much more difficult must it be for our friends in smaller communities to do this.

There is, however, a way in which the State Health Department can be of tremendous benefit in the eradication of this grave condition, and that is *educationally*.

To revert to my former statement that *all* cases of puerperal sepsis are not due to the medical man in attendance, I will call attention to the fact that the number of cases of puerperal sepsis occurring in women that have had good prenatal care is very small. The generally accepted theory that puerperal sepsis is due to two things, namely, the obstetric wound and infection implanted thereon, is unquestionably true as far as it goes; but there is one important added factor which has not been made clear to the layman, and that is the resistance of the individual. Without going into a long discourse upon the psychic and mental state of a pregnant woman, I think it must be generally admitted that the woman whose general psychic condition is good, has a distinctly higher state of resistance, other things being equal.

To come down to the point: Where there is unquestionably a definite responsibility, that is, in the actual management of a case of confinement, there, the state could do missionary work in the way of education along the proper lines of asepsis. It must be understood, however, that poor asepsis is not the only provocative factor in the causation of sepsis when this condition can be definitely ascribed to the doctor in attendance. The application of forceps too early, their rough handling and various errors of judgment and technique are frequently to blame.

Lastly—Although there always must be a certain mortality in the act of childbirth, when maternal mortality does occur, the report of this death should be forwarded to the State Health Department, giving a short history of the case and the cause of death in the opinion of the attending physician. This should be a big help in vital statistics.

In closing, I may sum up as follows: The state may exercise a greatly beneficial control,

First—Through the correcting of the misunderstood idea that all sepsis is due to the physician in attendance, this having been a partly justifiable propaganda for better obstetrics.

Second—Through well advertised, and properly managed prenatal clinics throughout the state, under the control of properly qualified physicians, where prospective mothers may receive good care and advice.

Third—Through the issuing from time to time of instructive articles on general obstetric topics, particularly on the technique of the management of labor.

Let me say that I believe that the state control of puerperal sepsis should be educational rather than judicial.

1936 Spruce Street.

NAPKIN ERUPTION OF JACQUET*

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Napkin area eruptions in infancy merit more description than is usually given them in most pediatric treatises, where they are too lightly alluded to. There are at least five important and distinct eruptions occurring in this area requiring careful diagnosis. It is a grave error to mistake a syphilitic eruption for a simple irritation, and likewise much inconvenience may be avoided when an impetiginous lesion is recognized and not regarded as a simple dermatitis of the napkin region.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

Napkin area eruptions have undoubtedly existed since napkins were first worn, yet it is comparatively recently that their various types and phases have been understood. The first known descriptions of them were in the early part of the Nineteenth Century when they were regarded as normal physiologic processes—"infantile erythemas of the buttocks occurring in the newborn a few hours after birth and lasting a few days to a few weeks." Valleix[1] in 1838 was one of the first to give any study to the condition etiologically, and he concluded the most likely cause was irritation and infection (thrush fungus) with the feces. Trousseau and Delpech in 1845 first described the papular type of the "simple napkin eruption." Parrot[2] in 1877 gave with remarkable exactness the first detailed description of the various phases of simple napkin eruption and, though at first believing the papular type but a phase of this eruption, unfortunately later concluded that all papular and ulcerating lesions in this area were syphilis, and his opinions swayed the medical world to this belief until 1886, when Jacquet published the first of his essays on this subject.

Clinically and histologically the descriptions of Parrot were surprisingly correct and the equal of any to-day, and had he not mistaken the papular eruption phase for syphilis he would have the honor of being the first to recognize and properly group the various phases encountered in the "Simple Napkin Dermatitis of Infancy." Jacquet[3] in 1886 rescued the papular form from being considered a lenticular syphilide by his thesis, "Des Erythemes Papuleux Fessiers Posterosifs," in which he gave a remarkable account of the various phases which this simple eruption may present.

ETIOLOGY

Apparently the causes of Jacquet's napkin eruption are numerous and varied. Collectively they may be placed in two groups, one external and the other internal. Under the external causes are irritations and infections, and the internal causes are systemic and reflex nerve disturbances. The skin responds with redness, vesiculation and ulceration to a multitude of external irritations. In infancy the napkin area is subject to contact with urine, feces and perspiration, and the heat and moisture afforded with the diapers furthers decomposition and bacterial growth. The diapers readily afford a source of chemical irritation when they are improperly rid of alkali deposited from the urine and feces and from the use of strongly alkaline soaps in laundering.

The stools act as an irritant by their moisture and decomposition and induce maceration of the skin. Contamination of the skin with microörganisms from the stools may explain some cases. Fungus (thrush) invasion of the skin from the stools was believed the cause by Valleix in 1838, and more recently Beck and Kumer[4] in Germany attributed several cases to the Thrush (Oidia) fungus which they readily demonstrated in the vesicles and scales of the skin lesions. Beck called the eruption "infantile mycotic erythema of the napkin region."

The high acid content of the stool, as occurs in cases of intestinal fermentation, may act as a chemical irritant to the buttocks. A highly alkaline stool may induce similar skin reactions.

Alkalies are believed by many to be the most frequent and important factor in external irritation, alkali from the urine and from the use of strong soaps in laundering being the chief sources. Hart,[5] in a recent very interesting essay, describes what he believes to be the cause of the "ammoniacal diaper" which has lately come into vogue in the etiology of this condition. He states that the more liberal the diet the more ammonium salts are deposited in the diaper from the urine. The ammonium salts break down with the liberation of free ammonia which is very irritating. The lower the acidity of the urine and the greater its concentration the greater will be the production of free ammonia. A highly acid urine will not liberate ammonia as readily as will an acid urine nearly neutral. This irritating alkali is increased when strong soaps are used in laundering the diapers and they are improperly rinsed. Bacterial contamination from the urine and feces augments the splitting up of ammonium salts, producing a diaper which is highly alkaline and consequently very irritating. Cooke[6] examined several cases bacteriologically and isolated from the stools of each a urea-splitting, Gram-positive bacillus (Bac. ammoniogenes), a saprophyte which infects the diaper from the stools, where it breaks up the urea deposited by the urine with the production of free amonmia, causing an "ammoniacal diaper." Strongly alkaline soap used in washing the diaper and allowed to remain in the diaper from insufficient rinsing or neutralization in some mildly acid solution is apparently a very frequent cause. Weill,[7] by proper sterilization after laundering of diapers, reduced the number of cases of Jacquet's eruptions of the napkin region form 6% to 1%. Evidently some cases are due to irritating marking inks in the linen, as experienced by Borinski.[8]

Internal factors to be considered: Systemic disturbances undoubtedly play an important, though perhaps secondary, rôle in the etiology of this condition. Urticarial states or a papular urticaria is not infrequently encountered. Overfeeding and overloading of the stomach, too frequent feeding, or faulty food formulæ in fats, sugars, or proteids may act detrimentally since indigestion, fermentation, and other gastro-intestinal disturbances are frequently noted. Summer diarrheas, inanition, and cachexia sometimes accompany the eruption. Reflex disturbances such as may be expected during the teething period, perhaps from phimosis, etc., deserve consideration since eruptions are frequently encountered at this time. Whatever the internal factor may be, some vasomotor disturbance is induced, with a probable lessening of the resistance of the skin and the consequent development of an eruption of the area covered with the diaper, especially in the presence of an external irritant.

CLINICAL DESCRIPTION

It is appropriate to state first that the napkin area of an infant includes the buttocks, perineum, genitalia, pubes, lower abdomen, sacrum, and the upper thighs. The calves of the legs and the heels, being frequently involved from contact through flexion, are likewise included. It will be noted that all these areas present prominent, rounded, convex surfaces separated one from the other by deep flexures or sulci. The diaper covers or comes into direct contact with all these surfaces, allowing friction, warmth and contamination with the urine and feces, thus producing the various phases of the eruption. The flexures and sulci are never involved, though they do afford warmth and friction between apposed surfaces but not with the diaper. The various phases of the simple napkin eruption have been grouped by Jacquet as follows:

1. Simple erythematous dermatitis.
2. Erythemato-vesicular dermatitis, "erosive phase."
3. Papular dermatitis, "posterosive phase."
4. Ulcerating dermatitis.

Each is a distinct phase of one process, though two or more phases may coexist forming the so-called "mixed eruption" of Jacquet.

1. *Simple Erythematous Dermatitis.*—This is the primary phase usually seen in very young infants. The term dermatitis is not wholly appropriate as this phase is clinically a hyperemia. The hyperemia is usually intense and forms a bright red sheet over the convex prominences of the buttocks and upper thighs posteriorly and usually the scrotum, or lower portions of the vulva, and the perineum. The lower abdomen, the sacrum, and even the calves of the legs on their postero-internal aspect, and the heels from contact with the diaper during flexion may show involvement. The skin is bright red and slightly swollen and glossy and to touch feels hot and smooth. In the milder cases the skin may be dry with a scarcely perceptible exfoliation, while in the more severe types serous oozing is often noted. In the milder cases the redness may be limited to the buttocks or genitals, whereas in very severe cases the erythema may extend from the umbilicus to the toes. The flexures and sulci remain free of the eruption throughout and in only the most severe cases when the eruption is very extensive are they likely to be involved. In severe types of this phase a marked oozing with fissuring, excoriations, and perhaps bleeding may occur. This phase constitutes the "*simple infantile erythema*" of Jacquet, the term "simple" having been applied to the process by Moussous.[9]

2. *Erythemato-Vesicular Dermatitis or "Erosive Phase."*—This phase, also known as the "simple vesicular erythema" and the "erosive phase," is simply the primary erythematous type upon which vesicles have formed. The vesicles themselves are rarely seen, as the epidermal coverings are soon rubbed off by friction, leaving small, rounded split-pea sized denudations known as "erosions." These erosions are small, vary from 1 to 4 mm. in diameter, have a slight sero-fibrinous exudation which dries, giving them the appearance of brilliantly shining bright red spots. They are always located toward the center of the hyperemic patches, since this is the uppermost portion of the convexity and the most intense portion of the process. Frequently several of these small erosions, being in apposition, merge one with the other, forming irregular, polycyclical erosions. Rarely small, flat vesicles of minute dimension may be discovered toward the margin of the erythematous patch. At times the vesicles are not mechanically deprived of their epidermal covering, giving clinically a true vesicular erythema and escaping the "erosive" stage of this type.

3. *Papular Dermatitis or "Posterosive Phase."*—This, the third phase of the napkin eruption, was accurately described by Parrot in 1877, and though in his earlier writings he considered it a type of simple napkin eruption, in his later essays he changed his earlier views and regarded it a lenticular syphilide. It was unfortunate that he changed his primary opinions be-

cause his later writings caused it to be generally recognized as an eruption of syphilis and it was not till the writings of Jacquet that this error was corrected and it was again replaced with the simple napkin eruptions. Jacquet demonstrated this phase to be but a later stage of the vesicular or erosive form in which granulations have formed, giving the appearance of papules. Since it is granulation tissue occurring in the erosions which follow the vesicular phase it would be more appropriate and accurate to call them "pseudopapules." They occur, as does the vesicular or erosive form, on the convex surfaces of the buttocks, the upper halves of the thighs posteriorly, exceptionally on the lower halves of the thighs, the lower portion of the vulva or scrotum, and upon the postero-internal aspect of the calves of the legs. They may occur in groups of 4 or 5 or be quite numerous. Their papular appearance is more developed on the buttocks and upper thighs than on the lower thighs and calves. Morphologically they are flat, scarcely elevated, rounded, bright or dull red, violaceous or brownish in color, and average from 3 to 5 mm. in diameter, some larger, others smaller. Their surface is glossy and smooth, especially those located in the center of the convex prominences. Their epidermal covering is evidently very thin, yet they are rarely excoriated, oozing or depressed. The intervening skin is likely to show here and there small brownish macular discolorations, the last vestige of papules in process of disappearing. The papules disappear very slowly and their sites are long afterwards marked by this brownish coloration.

In mixed types the intervening skin may show the original erythema and it is not unusual to find an erythema on the lower abdomen, calves and heels in these cases. It is characteristic to find them centrally located on the convex prominences of the buttocks and thighs and never in the flexures or sulci. Inguinal adenitis never accompanies this eruption.

It is fortunate that Jacquet reclaimed this phase of the napkin eruption from the eruptions of congenital syphilis and it seems incredible that one of the clinical ability of Parrot and his followers could have fallen into the error of mistaking this papular form of infantile napkin eruption for a lenticular syphilide. It must be kept in mind that this is the wrongly called "lenticular syphilide of Parrot." Jacquet, because of this clinical resemblance to syphilis, offers the name "posterosive syphiloide" and, because of the transformation of the vesicle to an erosion by denudation and then to a papule or "pseudopapule" by the growth of granulation tissue, forming the "papular phase," he has called this type the "posterosive" or "papular erythema." Sevestre compromises by calling it a "lenticular erythema."

4. *Ulcerating Dermatitis.* — Fortunately this type is less frequent than any of the preceding. It usually occurs in debilitated infants in whom the power of tissue recuperation is at a very low ebb. This form, like the papular, is a transformation of the erosive stage (not the posterosive) in that the erosion goes on to ulceration and does not develop into a papule or pseudopapule by the formation of granulation tissue. The ulcerations have sharp margins and a "punched out" appearance, are oval, circular or irregular in shape and often become confluent, forming grotesquely shaped, polycyclical lesions. They occur along the perineal raphe, at the base of the vulva, or scrotum, on the convex prominences of the buttocks, posterior portions of the thighs, calves and heels, and at times on the lower abdomen and sacrum. In very severe cases they are likely to occur on the occiput and like places of pressure. They may be so severe as to lay bare muscle, cartilage and even bone. Again, mixed types may occur, vesicles, papules, and erythema may here and there coexist with ulcerations, forming "erythemato-ulcerative," "papulo-ulcerative," etc., the so-called "mixed" types.

HISTOPATHOLOGY

The erythematous stage.—The epiderm shows very early a slight intra- and intercellular edema (spongiosis). As the process advances many of the epidermal cells show small perinuclear cavities and finally become hydropic. The intercellular edema gradually involves the entire epidermis. Here and there, just beneath the corneous layer, contiguous hydropic cells break down, forming minute epidermic vesicles. The minute vesicles are amicrobic, contain cellular debris, and are not evident clinically. At some portions of the epiderm, nuclei are seen to persist in the corneal cells—parakeratosis. There is very slight, if any, enlargement of the rete pegs. The papillary body of the corium is edematous and may show a slight cellular infiltration. Capillaries are slightly dilated.

The vesicular stage.—This is rarely seen clinically. The minute intra-epidermic vesicles described in the previous phase gradually enlarge until they fill the entire width of the rete of the epiderm. They contain serum, normal and disintegrated epidermal cells, and polynuclear leukocytes. They evidently rupture at the surface or transude between the cells of the corneous layer. The epidermal cells just beneath the recently ruptured vesicles show a spongioid state for a while, which tends to disappear as the surface where the vesicle has ruptured dries and forms a scale. Frequently a secondary infection with pyococci occurs in the ruptured vesicles, with the formation of crusts.

The erosive stage.—Here the same histologic features persist, except for some modification which may be explained mechanically—maceration and friction with the urine, feces, and diapers. The thin epidermic coverings of the previously formed intra-epidermic vesicles have been rubbed off, leaving here and there minute and shallow open depressions or "wells" in the upper epiderm which are filled with cellular debris and coagulated serum. These form the minute erosions of this stage. The size of these erosions may correspond to 2 to 12 or more underlying papillary pegs. Intracellular edema and spongiosis is marked in the surrounding epiderm and there is likely to be some cellular (polynuclear and lymphocytic) infiltration. As the (clinical) erythema disappears so does the edema, infiltration and parakeratosis of the epidermis, as well as the congestion and infiltration of the papillary body of the corium.

The papular stage.—The histopathology of the papular stage differs greatly from the preceding. Here there is marked thickening of the epiderm, a persistent parakeratosis of the upper portions and a marked proliferation of the epidermal cells proper—hyperacanthosis. The intercellular edema is less marked than in the preceding stages and there is an occasional cell with a swollen (hydropic) perinuclear cavity (*alteration en cavitaire*), and perhaps the vestiges of a vesicle —an area made up of coagulated serum, cellular debris and micrococci. The rete pegs of the epiderm are greatly elongated and enlarged laterally, enclosing swollen, congested, and more or less infiltrated, elongated, and irregularly enlarged papillæ of the corium. The corium shows dilated but normal capillaries and lymph spaces. The cellular infiltration of the corium is not dense and has no tendency to be denser about the capillaries than elsewhere. It consists chiefly of polynuclears, round cells, and a few plasma cells.

Briefly, then, the erythematous, the vesicular, and the erosive stages are featured histologically by inter- and intracellular edema, rudimentary vesicle formation, parakeratosis and acanthosis in the epidermis, and congestion, edema and infiltration of the papillary body of the corium.

The papular stage differs greatly from the preceding types by the great exaggeration of its features. Here there is marked proliferation of the rete cells (hyperacanthosis), marked lengthening of the rete pegs, less parakeratosis and edema than in the former stages and in the corium a lengthening of the papillæ, dilatation of the capillaries and lymph spaces and a greater infiltration of polynuclears, round cells and plasma cells.

Parrot, Ferrand,[10] Hodara,[11] and Jacquet, have all given very careful study to the histopathology of the various phases met with in napkin eruptions. Ferrand claims the term "erythema" is inadequate to describe the process, since a dermo-epidermitis is present from beginning to end.

DIAGNOSIS

In diagnosing the napkin eruptions it is well to bear in mind the clinical features of intertrigo, infantile impetigo, vacciniform ecthyma, seborrhœic dermatitis, and congenital syphilis, a short clinical description of which will be attempted.

Intertrigo.—This was considered by Jacquet a simple napkin eruption except that it occurs in the flexures and sulci instead of the prominent convex surfaces of the napkin region. This view is not accepted generally. In infants, especially in warm weather, there occurs in the flexural folds and sulci of the skin, where the surfaces are in apposition, an intense redness and heat which later becomes macerated from the concomitant oozing. There is usually some tenderness and itching which makes the infant restless and fretful. Unless immediately cared for it offers an excellent soil for the implantation of streptococci, the cause of impetigo.

Impetigo in Infancy.—This is not infrequent and often involves the diaper region, especially the flexures and sulci. In the simple flexural cases it appears as an intertrigo except for the development of phlyctenules toward the margins of the patch. The streptococcus is the primary cause of the development of the minute vesicles which frequently develop to larger bullæ. These soon rupture and an amber-colored crust develops from a mixed infection with streptococci and staphylococci. Usually very young children present the purely phlyctenular eruption and older infants mixed phlyctenular and amber-crusted types. Impetiginous lesions not only develop in the flexures of the diaper area but on the trunk, face, postauricular regions and extremities. Paronychias of the fingers are apt to occur. The invasion may be so severe as to cover the entire skin surface with large flaccid bullæ, the tops of many of which are mechanically rubbed off, leaving large, raw-red, moist areas constituting the so-called "pemphigus neonatorum" or "bullous impetigo of infancy." As a rule these pyogenic or impetiginous invasions occur shortly after birth and frequently in seemingly well-nourished infants. The infection can sometimes be traced to a member of the family, a nurse, or an impetiginous eruption of another patient.

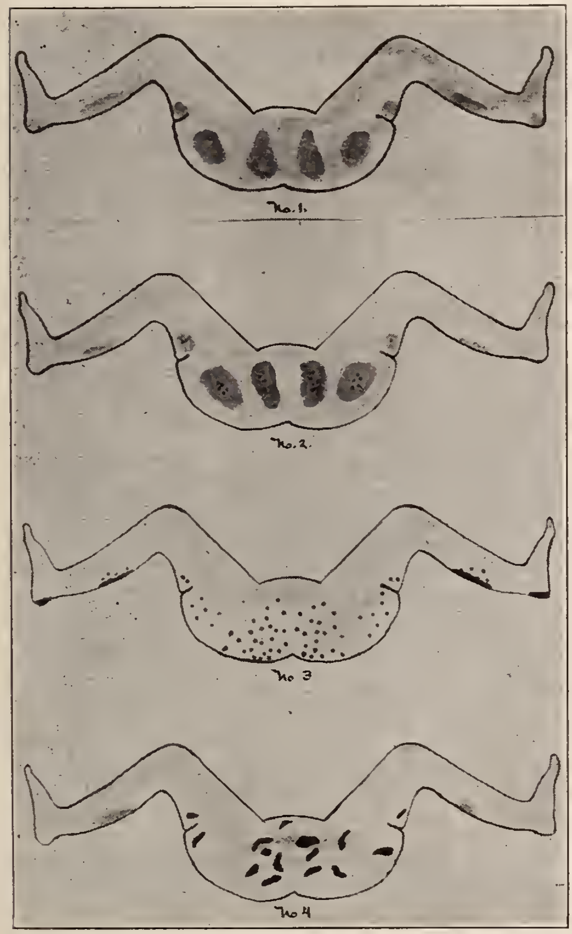
Infantile Vacciniforme Ecthyma.—This condition, fortunately, is rarely encountered, and when met with is frequently mistaken for a papular syphilide or the papular form of Jacquet's napkin eruption, from both of which it is distinct. It occurs in very young infants and usually is situated on the apposed surfaces of the genito-inguinal folds, the peri-anal region, sulci of the thighs, and sometimes in the popliteal spaces. The lesions begin as small erythematous macules, which stage is rarely seen, and develop rapidly into papules in the center of which a small, tense, translucent vesicle soon develops. The vesicle becomes umbilicated centrally and the periphery takes on a moist, soggy, sodden, succulent aspect, slightly elevated and of a silvery-white or a lead-gray color, just beyond which is a narrow, bright red, encircling zone of erythema. They strikingly resemble vaccine lesions. Later the epidermal covering is frequently destroyed, leaving a bare, red, granulating surface or one covered with a creamy diphtheroid membrane beneath which ulceration is observed. The lesions are auto-inoculable, tend to form groups, vary individually from 2 to 10 mm. in diameter. It is not unusual for contiguous lesions to ulcerate into one another, forming large, diffuse, often polycyclical ulcerations, retaining the grayish-white membranous covering. The borders of these larger areas always show the characteristic broad, sodden, creamy elevations and narrow marginal erythema. Adjacent lymph glands are swollen and painful. A history of recent vaccination of the infant is often obtainable and it may be that these lesions develop from accidental inoculation with the virus, as suggested by Jacquet. Adamson cultured pure streptococci from his cases.

Various synonymous appellations have been applied to this dermatosis, the chief of which are: "Infantile Vacciniforme Syphiloide" (Fournier), "Infantile Vacciniforme Erythema" (Besnier), "Herpes Vacciniforme" (Hallopeau), "Syphiloide Vacciniforme Ecthyma of Young Infants," "Varicelloid Dermatitis" (Mantegazza), etc.

Infantile Seborrhœic Dermatitis.—This condition is of frequent occurrence in healthy-looking infants and is especially likely to involve the diaper area, but not it alone, as the scalp, the oronasal portion of the face, the backs of the ears, neck, axillæ, umbilicus, and popliteal spaces are apt to show involvement. Flexural and convexed surfaces are involved alike, the flexures presenting oozing, dull red surfaces which merge with similar greasy-looking, dull, yellowish-red, slightly scaly patches covering convexed parts. The margins of the patches are sharply defined and just beyond them minute, pin-head sized, greasy, reddish papules or smaller patches are likely to exist. The process is apparently due to the white skin staphylococcus.

Congenital Syphilis.—Infants with congenital syphilis usually develop a macular or a maculopapular skin eruption about the fourth to the eighth week. Previous to this period they often appear robust and healthy. Accompanying the eruption is a loss in weight. Snuffles and rhagades develop, and the child is fretful and has a hoarse cry. Iritis or an enlarged testicle are rare developments. Scattered over the flexures and convexities alike of the buttocks, perianal region, perineum, genitals, lower abdomen, thighs, and especially over the palms and soles and the nasolabial area of the face, there develop more or less uniformly sized, rounded, copper-colored macules or maculopapules. The macules are slightly redder than the maculopapules and show as faint brown spots under glass pressure. The maculopapular lesions are more copper-colored and the cellular infiltration causes them to have a thickened disc or coin-like contour to palpation. They are usually symmetrically, but may be asymmetrically, distributed. Here and there a scale may form on the surface of some of the lesions. Often about the mouth and anus the eruption is more marked and an agglomeration of the individual elements may form infiltrated patches. In moist areas, as the mouth region, the anus and flexures, the lesions are apt to become denuded of their epidermal covering and develop into superficial ulcerations, secreting a sticky puriform mucous. As a rule the individual lesions are lenticular in size. Adamson[12] found ulcerated skin lesions rare in syphilis and that most cases so diagnosed were of an impetiginous nature or were the ulcerated type of Jacquet's napkin eruption. Rarely infants at birth show a bullous syphilitic eruption (the wrongly called syphilitic pemphigus), and these as a rule soon die. The general skin surface of infants with a congenital syphilitic eruption has a dull, muddy look. The rhagades about the mouth and anus result in radiating, linear scars.

Napkin eruptions of Jacquet differ from syphilitic eruptions in that they do not occur in the flexures and folds of the skin but only on convex surfaces. They are not situated on the face, there is no perioral or perianal grouping, and they never occur on the palms and soles. The eruption lacks the ham-like or coppery tint of syphilis, it changes its aspect daily and readily disappears under proper local and systemic measures. The papular form of Jacquet's eruption is the most likely to cause error in diagnosis; but bearing in mind the superficial character, the localization, and the absent coppery color to the lesions, the lack of snuffles, rhagades, and the hoarse cry, an erroneous diagnosis should be avoided.



SCHEMA OF THE FOUR TYPES OF SIMPLE NAPKIN ERUPTIONS IN INFANCY

1. Erythematous type: smooth, glossy, bright red hyperemia of the prominences of the buttocks, thighs posteriorly, calves, and heels.
2. Erythemato-vesicular or "erosive" type: occurrence of minute vesicles or shallow erosions at the center, most prominent portion, of the hyperemic convexities.
3. Papular or "posterosive" type: few or many scattered papules (pseudopapules: erosions plus granulations) over convexed surfaces. Hyperemic phases absent.
4. Ulcerative type: erosions of the second phase have now progressed to ulcerations, no "third phase" granulations having formed.

A bullous impetigo is apt to be mistaken for syphilis and it is to be remembered that it appears a few days after birth, whereas a bullous syphilide is usually present at birth. The primary lesion of impetigo is a small clear vesicle which later ruptures to form an amber-colored crust. Impetigo is situated in the flexures, sulci, and especially back of the ears and hands, whereas bullous syphilides appear on the palms and soles, many of which soon rupture, leaving a surface at first raw and red and later of a dull coppery color. Here and there typical syphilitic infiltration papules of a waxy, copper tint are usually observed. The child is, as a rule, healthy and robust in impetigo, whereas an infant with syphilis of the bullous type is wan and wasted and soon dies.

The vacciniforme eruption or ecthyma of the napkin area is most likely to be mistaken for syphilis since the ulcerations are sharply marginated. But the lesions are very superficial, show no infiltration, lack the coppery color of syphilides and appear in multiform shapes, some umbilicated, some with a sodden, whitish border, and others with a peculiar sticky diphtheroid covering. Likewise *vacciniforme ecthyma* must not be mistaken for the erosive or ulcerative phases of Jacquet's napkin eruption because of the characteristic features which have been enumerated.

Infantile seborrhœic dermatitis is readily differentiated from syphilis by the large pinkish or yellowish, irregular, superficial character of the patches which involve the flexures and sulci of the buttocks, face and extremities. The surface of the patches is slightly moist, greasy, and presents a finely scaly, granular appearance. From impetigo the differentiation is not always easy but the absence of minute, clear vesicles which later rupture and become covered with an adherent, amber-colored crust should keep one from error. *Seborrhœic dermatitis* differs from Jacquet's napkin eruption chiefly in that it involves the flexures and occurs over the face and scalp, whereas Jacquet's eruptions appear only on the convex surfaces of the buttocks, the posterior thighs, and through flexion of the legs, on the calves and heels.

TREATMENT

The treatment of Jacquet's napkin area eruptions consists of simple measures. Locally cleanliness is most important. It is advantageous to wash the buttocks with a solution of boric acid. After careful drying a dusting powder may be used consisting of 2% boric acid powder in talc; or the mopping on of a powdery lotion composed of 5% each of calamine and zinc oxid powders in lime water, to which 2% boric acid may be added, is good. A lotion of 5% each of bismuth subnitrate and zinc oxid in lime or rose water, or one of equal parts each of milk of magnesia, lotio nigra, and lime water may be indicated. In some cases dusting powders and powdery lotions do not act so well, and in these Lassar's paste, either half or full strength, may be applied as a thin protective coating.

The parts should be cleansed gently with a mild soap and warm water, dried and then treated with one of the above or similar lotions. The lotions are first shaken and then gently mopped on the affected surfaces. The diapers should be of some soft, nonirritating material, should be scrupulously clean always, and careful watch made for their soiling, when they are immediately changed. Diapers should never be washed in strongly alkaline soaps, and after washing should be rinsed in a weak solution of boric acid, phenol or cresol, etc. In institutions, sterilization will prove advantageous.

Indigestion, fermentation and other gastrointestinal disturbances are to be corrected. Urticaria and lichen urticatus, which are frequently noted, will likely be due to a sensitization with some food element. Too frequent feeding or overloading the stomach at the feeding hour is a likely cause of urticaria and gastric disturbance. Any suspected reflex disturbance should be corrected, if possible. Alkalies by mouth often prove of value.

In the treatment of infectious conditions such as impetigo, vacciniforme ecthyma, etc., mild antiseptic washes such as a 5% solution of boric acid or a 1:5000 bichlorid solution, followed with a mild antiseptic ointment such as a 1% ammoniated mercury will bring about prompt healing.

Infantile seborrhœic dermatitis responds readily to a mild (1%) sulphur ointment.

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DISCUSSION

Dr. Edward F. Corson (Philadelphia): I am sorry we could not hear all of Dr. Crawford's paper. He certainly covered every phase of his subject with great thoroughness. I think the clinical description was particularly ably presented.

The simple napkin eruption is one of the minor ailments of infancy with which every pediatrician is familiar. The dermatologist, as a rule, sees only the severer cases. Recently, to ascertain the relative frequency of this disease in the Skin Dispensary of the Children's Hospital of Philadelphia, I reviewed the last one hundred cases and found but two of them so classified. I think this was largely due to the fact that most of these cases are treated in the medical dispensary. They come there for some medical ailment. The infection or eruption is trivial and the case is treated and cured before it is necessary to refer it to the skin department. These one hundred cases all occurred in the last six months. I think if I had gone back over the entire year there would have been a higher percentage, as I was seeing a number of these cases during the winter—not that cold weather seems to affect them adversely; rather the contrary.

I might add to the etiologic factors that Dr. Crawford has mentioned, the rubber diaper that is so frequently seen in our dispensary patients. Especially in hot weather, and if this cover is worn at all continuously, the diaper is removed in a steaming condition which either initiates or aggravates the napkin disorder.

The vesicles of the second stage of the disease are rarely seen intact. I scarcely ever recall having seen them unbroken. Even the removal of a wet diaper is usually sufficient to rupture them, they are so thin-walled and delicate.

The main diagnosis is between this disease and syphilis, and we must not forget that it is possible for these two to coexist. As far as I know there is no reason why syphilitic individuals cannot exhibit any of the skin eruptions with which the nonsyphilitic can be affected. Only recently in a case of this type I almost overlooked the luetic element when an intense dermatitis had thoroughly covered up the underlying condition.

In treatment, next to regular and frequent changing of the diapers and absolute cleanliness, the most important measures are sterilization of the napkins and the use of some mild antiseptic. I do not approve of using bichloride to soak the diapers in, or lysol, or anything of that strength; boric acid is usually sufficient.

Certainly many of these cases which are brought about by chemical irritation are perpetuated by secondary infection. The use of an astringent and antiseptic lotion, for instance boric acid and zinc, or boric acid with one of the bismuth salts, in conjunction with a thick protective salve, is usually sufficient to bring them to a successful termination.

In spite of the fact that Dr. Crawford has quoted an early commentator who described it as lasting from a few days to a few weeks, some of these cases are very intractable and resist all our measures to bring them to a successful termination.

Dr. Crawford (in closing): I wish again to emphasize that the eruption should be regarded more seriously than is usually the case. It is too frequently dismissed as an "excoriated buttock" and no attempt is made to differentiate it from impetigo and syphilis. Impetigo has minute clear vesicles, which latter rupture and become amber-colored crusts, and are apt to be located in the sulci and scattered over the trunk and face. The papular form of simple napkin eruption must be recognized as such and not mistaken for a papular syphilide as is frequently the case. The papular napkin dermatitis has no infiltration, is purely superficial, and is usually a glistening, bright red color; whereas a syphilide always presents infiltration, is of a coppery color, and will usually be grouped about the anus and about the mouth and scattered over the arms and legs. The general skin becomes of a muddy color and the child rapidly loses in weight and robustness.

The rubber diaper is undoubtedly a frequent cause, since it retains heat and moisture, inducing maceration and irritation.

As regards treatment it is necessary to have diapers of good, nonirritating material, to keep them clean and frequently laundered and not allowed simply to dry when saturated with urine. In hospitals sterilization will prove of value, and in homes simple laundering with a good soap, thorough rinsing in boric acid solution and then in water.

Gastro-intestinal disturbances must be sought and corrected. Locally a half strength Lassar paste or a calamine lotion usually suffices. Dusting powders are frequently irritating.

SELECTIONS

HUMAN TUBERCULOSIS OF BOVINE ORIGIN*

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The intertransmissibility of human and bovine tuberculosis was generally accepted by clinicians until Koch made the statement in 1901 at the British Congress on Tuberculosis that there was a difference between human and bovine tubercle bacilli. Previous to this time, all the investigators with the exception of Theobald Smith contended that they were one and the same. Koch also stated at this time that bovine tubercle bacilli were of very little, if any, importance in the causation of human tuberculosis. This statement is not now accepted.

The most trustworthy studies that have been made by modern means, show that in the vast majority of cases of tuberculosis among human beings, only the human type of tubercle bacilli is found, but in young children and in butchers types of infection have been found in which only the bovine type of bacilli has been discovered. Dr. Park, of the New York Health Department, who has made a fairly elaborate study of this subject, estimates that about ten per cent of the cases of tuberculosis are due to bovine infection, and that these practically all occur in children under ten years of age and that they are practically all alimentary infections, due to the use of infected milk.

The reason for the greater preponderance of infections by the human tubercle bacilli among human beings is obvious. Tuberculosis in human beings is often what is called open tuberculosis. That is to say, if it be in the lungs, tubercle bacilli are spat up with the sputum and may infect the surroundings of the patient; if it be surgical tuberculosis, discharges from the tuberculous focus may also gain access to the surroundings of the patient. The intimate relations between human beings, that is to say, between mother and child, between man and wife, between individuals living together in restricted quarters, all favor the direct transmission of the human type of tubercle bacilli. This condition is not duplicated in connection with cattle having tuberculosis. Cattle rarely or never cough up tuberculous sputum. They rarely have open forms of tuberculosis, unless the presence of tubercle bacilli in milk may be so regarded. In consequence, contact between human beings and cattle which would favor a dissemination of the bovine tubercle bacilli to humans is largely with that part of the community that use in an uncooked state bovine products, such as milk which may be carrying the bovine tubercle bacilli.

The cases of infection by bovine bacilli are mostly in children, and mostly confined to tuberculosis of the intestines, lymph nodes, bones, and joints. Rosenow, of Rochester, Minn., makes the statement that "it has repeatedly been demonstrated that microörganisms entering the human body tend to colonize in the tissue to which they have been accustomed in the last host in whose tissues they have lived." Tuberculosis in cattle is largely a disease of the lymph nodes and serous membranes, and bovine tuberculosis in human beings is chiefly lymphatic.

TABLE I.

Human and Bovine Type of Bacillus in 1,511 Reported Cases. (Park and Krumweid.)

Diagnosis	16 Years and Over.		5 to 16 Years.		Under 5 Years.	
	H	B	H	B	H	B
Pulmonary Tuberculosis ..	778	3	14	..	35	1
Tuberculous Adenitis, axillary or inguinal	3	..	4	..	2	..
Tuberculous Adenitis Cervical	36	1	36	22	15	24
Abdominal Tuberculosis ..	16	4	8	9	10	14
Generalized Tuberculosis, all forms, including meninges	40	1	19	5	172	33
Tuberculous Meningitis ...	1	..	3	..	28	4
Tuberculosis of Bones and Joints	32	1	41	3	27	..
Genito-urinary Tuberculosis	22	1	2	..	..	..
Tuberculosis of Skin	10	3	4	6	2	..
Miscellaneous Cases	2	1	..	1	1	..
Totals	940	15	131	46	292	76

As children do not consort with cattle, such bovine bacilli as find their way to them seem likely to reach them through milk, and therefore through the alimentary canal. If these bacilli are taken up from the intestine and detained in the lymphatics, the disease may localize in the mesentric nodes and invade the peritoneum; or if they pass the lymph node barriers or otherwise gain admission to the systemic blood circulation, they tend to localize in other lymphoid structures such as the bone marrow, etc.

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* Read before the Allegheny County Medical Society, Pittsburgh, Pa., April 18, 1922.

Park and Krumweide,[1] of the New York Research Laboratory, have tabulated some 1,511 cases, with the results shown in Tables I and II.

The Imperial German Board of Health[2] presents in Table III an analysis of 1,400 cases, which is very interesting and varies somewhat from the figures of Park and Krumweide.

Practically all authorities concur in the interpretation. of these findings, though differing in their estimates of the relative importance of the two types of infection.

TABLE II.

Percentage Incidence of Bovine Infection.(1)

Diagnosis.	Adults 16 years and over.	Children 5 to 16 years.	Children under 5 years.
	Per Cent.	Per Cent.	Per Cent.
Pulmonary Tuberculosis	04.	0.0	2.8
Tuberculous Adenitis Cervical	2.7	38.0	61.0
Abdominal Tuberculosis	20.0	53.0	58.0
Generalized Tuberculosis (alimentary)	14.0	57.0	47.0
Generalized Tuberculosis	0.0	16.0	8.6
Generalized Tuberculosis, including Meninges (alimentary)	0.0	0.0	66.0
Tuberculous Meningitis (other than above)	0.0	0.0	4.6
Tuberculosis of Bones and Joints	3.3	6.8	0.0
Tuberculosis of skin	23.0	60.0	0.0

Dr. S. A. Knopf[3] says: "I believe strongly in the transmission of tuberculosis from cattle. Laboratory, as well as clinical experiments, and the experiences of the past few years of American and European investigators, show conclusively that about ten per cent of tuberculosis in children is due to the bovine type of bacillus."

TABLE III.

	Total number investigated cases.	Types.		Per Cent. of All Cases Due to Bovine Type.	
		Human.	Bovine.	In Adults.	In Children.
Tuberculosis of Lungs	811	807	5	0.66	0.
Tuberculosis of Bones and Joints	99	95	5	6.66	4.3
Meningeal Tuberculosis	33	30	3	0.	10.34
Generalized Tuberculosis	178	147	33	2.5	23.18
Tuberculosis of the Cervical Glands	167	120	47	5.8	49.7
Tuberculosis of the Mesenteric Glands	112	78	35	12.0	51.0
Totals	1,400	1,277	128	....	....

M. J. Rosenau[3] states that "up to one-fifth or one-fourth of all cases of tuberculosis in infants and children are associated with the bovine bacillus."

In England, Delepine,[3] from a very careful study of the question, concludes that "it is possible to say without fear of exaggeration that not less than twenty-five per cent of the tuberculous children under five years of age suffer from infection of the bovine origin."

A. P. Mitchell,[3] in a study of seventy-two cases of cervical adenitis in children, occurring in Edinburgh and its immediate vicinity, found sixty-five cases yielding bovine bacilli and only seven cases yielding human bacilli. Thirty-five of the bovine cases were in children under five years old, and the remaining thirty in children under twelve years old. Of the children two years old or under, 84 per cent had been fed on raw cow's milk.

J. Frazer,[3] of Edinburgh, in one hundred cases of bone tuberculosis in children, found bovine bacilli in 62 per cent and human bacilli in 35 per cent of the cases, while 3 per cent yielded both types. As indicative of the probable source of infection in the bovine cases, 73 per cent of these children were under three years of age and had been fed unboiled cow's milk. Conversely, of the cases showing a human type of infection, 71 per cent gave a history of exposure to other cases in their families.

In the tabulation of Park and Krumweide, and the report made by the Imperial German Board of Health, all diagnoses were based on the identification of the tubercle bacilli, human or bovine, as the case may be, by cultural characteristics and the virulence of the bacilli as shown upon rabbits, and it is just possible that many of the cases diagnosed as of the human type may in reality have been originally of bovine origin. The transmissibility of type is contended by many investigators of recognized international authority.

Pottenger[4] states "It would not tax our credulity in the least to believe that bacilli of the bovine type might be taken into the tissues during childhood, and by adapting themselves to the human tissues for many years, might assume characteristics of the human bacillus by the time they were ready to extend to the lung or other tissues and produce clinical disease."

Von Behring[3] and his followers claim that the bovine bacillus is a very common cause of even pulmonary tuberculosis, maintaining that the infection occurs in very early life from the ingestion of bovine bacilli, which, it has been shown, may pass through the uninjured intestinal mucosa and reach the lungs by way of the mesenteric lymphatics and blood stream, often leaving no abdominal lesions by which to trace their course. Bacilli so introduced into the body are believed to be capable of prolonged latent existence in the tissues, becoming active under favorable conditions even after many years, and in the meantime changing in type from bovine to human. This view has been strongly supported by Vallee, Calmette, and many others, Calmette asserting, in 1905, that a majority of cases of pulmonary infection originated in this way.

Many American investigators just as eminent in the profession as those quoted above, and who are familiar to you all, hold quite the opposite view, and I shall quote from four personal letters received within the last few weeks, the views of these men.

Admiral E. R. Stitt, Surgeon-General, U. S. Navy, states: "My belief, which is I think the one generally held, is that the human and bovine types are separate and distinct strains of the tubercle bacillus (Mycobacterium tuberculosis), and I know of no work demonstrating successful transmutation."

Dr. Gerald B. Webb, Colorado Springs, Colorado, states: "I have never personally done any extensive work on the question of the relation between the human and bovine bacillus, and the possibility of transformation, therefore I can only weigh the evidence submitted by others. A good recent presentation of the evidence in favor of transmutation is contained in Calmette's 'L'Infection Bacillaire et la Tuberculose.' It does not seem to me convincing. A much stronger case, in my opinion, is that of the British Royal Commission as set forth in Cobbett's 'Causes of Tuberculosis.' Their conclusion was that while transmutation was a theoretical possibility for which there was a certain amount of evidence, it took place so slowly and inconstantly as to be of little importance in practical epidemiology; they could find no unquestionable instance of transmutation of a typical human into a typical bovine strain, or vice versa. Theobald Smith takes the same ground in his Mellon Lecture (*J. A. M.A.*, March, 1917), in a brief exposition of the subject which to me is very convincing."

Dr. Theobald Smith, of the Rockefeller Institute for Medical Research, says: "Concerning the problem of the transmutation of bovine tubercle bacilli into human bacilli, I would say that although this question has been dealt with by most experimenters and to a very large extent by the English Commission for the Study of Bovine Tuberculosis, no evidence has been presented of any transmutation. This leaves the question where it was at the start."

Dr. Lawrason Brown, of Saranac Lake, N. Y., states: "There is, as far as I know, no definite proof of the transmutation of type in any of the tubercle bacilli. There are certain organisms which seem to occupy a more or less intermediate position in regard to their manner of growth and virulence for animals. A few men claim to have been able to change the virulence of organisms. In fact, a few organisms apparently have been changed here, but it was never done intentionally, nor can the process be repeated. As far as we know now, there is no proof of any transmutation of type."

This briefly states the views of seven of the world's greatest authorities on tuberculosis, and of men who are best fitted to give an opinion on transmutation of type. You may make your own selection as to which view you care to adopt.

All investigators are of the opinion that human tuberculosis of bovine origin is in practically every case due to drinking the milk of cows infected with tuberculosis, and the only remedy necessary to stamp out what is just now beginning to be recognized as a most important factor in tuberculous children, is the eradication of tuberculosis in cattle, which would be a most desirable accomplishment from every point of view, but which would require many years of effort and coöperation of all concerned. The alternate to this most desirable plan is the thorough sterilization of all milk fed to children, which has many disadvantages and is impractical for obvious reasons, and must give way to pasteurization, which according to Holt,[5] should be carried out as follows:

"At present 150° to 155° F. (65° to 68° C.) are the temperatures generally employed. These temperatures are maintained from twenty to thirty minutes. This is sufficient to kill the bacilli of tuberculosis, diphtheria, and typhoid fever, and from 98 to 98.8 per cent of all other bacteria in milk. Most of the objectionable changes produced in sterilized milk are avoided when the temperature is raised only to 150° F. (65° C.), while it accomplishes the main purpose for which milk is heated, but even this temperature injures to some degree the antiscorbutic vitamin. The advantages of this form of heating are therefore obvious. But spores are not destroyed, and such milk requires special handling. It should be rapidly cooled, kept at a low temperature, and used within twenty-four hours after heating."

A brief study of a few actual cases should be interesting and a most striking case was furnished me by Mr. J. S. McFadyes, Vice-President and General Manager of the Pittsburgh Stock Yards Company, which illustrates the subject under discussion most forcefully.[6]

"One of the most glaring examples of the ravages of this plague and the relation which bovine tuberculosis has to human beings occurred in Paris, Edgar County, Illinois, some few months ago. Robert Goben, a resident of Edgar County, had a small herd of cows that was tested for tuberculosis by a federal veterinarian two years ago. One cow was found to be infected with tuberculosis and duly tagged and branded by the inspector and placed under quarantine by the Illinois State Department of Agriculture. Under the quarantine laws of the state this cow was to be kept on the farm segregated from the other cattle until she could be slaughtered and the carcass disposed of through the proper channel. Under no conditions was she to be removed from the farm until the quarantine was lifted. As in the case of many tuberculous cattle, this particular cow was in good flesh and apparently as healthy as any animal in the herd. Goben, in his ignorance regarding the disease and its peculiarities, did not believe that the cow had tuberculosis and boasted that he would be glad to have a whole herd like her. Accordingly he removed the government ear tag and gave her in payment of a debt to his farm hand, Robert Kelly. Mr. Kelly took the cow home and used her as a family milch cow for about a year. Less than a year after he had begun to use the animal, Mr. Kelly found unmistakable signs of distress among the members of his family. First, one of his daughters, a five-year-old little girl, was complaining of a pain in her back. Dr. Martin, a local physician, was called, and pronounced the case tuberculosis. Shortly after, similar signs and enlarged glands and sores on the body appeared in the case of four more of his children. At the present time, one of these children is in a very serious condition because the spine has become badly affected. There are seven children in the family, and all but two contracted the disease. One girl eleven years old, who did not drink milk, seems to be perfectly healthy. This is also true of the six-months'-old baby which has received none of the cow's milk. Even the pig and the family cat which received the milk from the cow, were found to be tuberculous on postmortem. The cow was slaughtered and a postmortem examination was made by Dr. Branigan and Dr. J. W. Martin, the attending physician for the Kelly family. The animal was found to have a badly generalized case of tuberculosis."

The other cases reported by Dr. J. A. Kiernan,[7] while not so striking as the above-mentioned case, illustrate the subject very convincingly.

Case No. 1. Reported by a physician, who advised that a Mr. S. became sick and showed symptoms of tuberculosis. The origin was traced to the cow furnishing milk to the family, and a state veterinarian tested the cow and pronounced her tuberculous. Mr. S. was sent to New Mexico for his health, and died there shortly afterward. At the time this animal was suspected of being tuberculous, there was no law calling for the condemnation or appraisal of the animal, and therefore the cow was not destroyed, but was sold to another man, and at the present time he is in Arizona, and several of his family have died of tuberculosis, which the Kansas physician believes was all traceable to the infection disseminated from this cow.

Case No. 2. The following is an excerpt from a letter from Dr. F. C. Akin, Oklahoma, Okla.: "The pure bred herd of Holsteins of Mr. T. was first tested by bureau officials in October, 1919. Of 88 head, 65 head reacted to the subcutaneous test. Shortly before this, one of his children, a baby, died of intestinal tuberculosis, evidently due to bovine infection, as the children were fed upon the milk from his infected herd. Later, another of the children, a girl about six years of age, developed tuberculosis of the intestinal form, but is still living. The other child, a boy about eight years of age, developed intestinal tuberculosis recently, at least a diagnosis of the disease was recently made by the attending physician."

A recent report made of infant mortality in the many large cities of the United States, places Pittsburgh at the head of the list, and also shows that the greatest majority of deaths is due to diseases of the alimentary tract. It would be interesting, and perhaps startling, if we knew just how many of these children died as the result of drinking milk from cows infected with tuberculosis, or from drinking milk that was improperly pasteurized. The milk supply of a great city is one of its most important industries and no doubt plays a greater part in the general health of the community than any other single factor; and, strange as it may seem, very little, if any interest is taken by the laity in the subject of pure milk supply, and only very few physicians give it more than a passing thought.

The milk supply of the city of Pittsburgh comes from more than eight thousand dairy farms. Very few of these dairies have been tested and found free from reactors, and to make a yearly inspection of the herds would require fifty-three full-time inspectors. The city of Pittsburgh does not require the pasteurization of milk shipped in for dairy consumption. Some kind of pasteurization is supposed to be carried out in about 95% of the milk used in this city, but it is questionable if it is very thoroughly pasteurized, except by some of the larger milk distributing companies.

The meat supply of Pittsburgh is much more satisfactorily safeguarded than the milk supply, and is of considerably less importance, as meat is never used in the raw state and is chiefly consumed by the adult population, and by children after the milk diet age.

CONCLUSIONS

1. The transmutation of type has not been proved to the satisfaction of the great majority of students of internal medicine, but the question of human tuberculosis of bovine origin is now generally accepted.

2. Bovine tuberculosis, as found in man, is due to the drinking of milk from tuberculous cows.

3. The use of meat of animals having tuberculosis is of very little, if any, importance in producing tuberculosis in man.

4. The remedy is to make examination of all dairy cattle compulsory and to refuse a permit to sell milk to all dairymen whose herds are not free from reactors. This would not only be a

great aid to public health, but would benefit the beef-raising industry tremendously.

5. The city should require all milk to be pasteurized according to whatever method necessary, to reduce the danger of infection to the minimum.

6. The present practice of permitting diseased animals to be slaughtered in private slaughter houses and sold to the public as healthy food products, should be overcome by requiring all animals to be slaughtered under competent inspection, and the smaller butchers whose business is not sufficiently large to require a full-time inspector, should have their animals slaughtered in a municipal slaughter house where competent inspection could be carried out.

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ABNORMALITIES OF THE NOSE AND THROAT OF INTEREST TO THE GENERAL PRACTITIONER*

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PHILADELPHIA

The entire medical profession cannot specialize in diseases of the ear, nose and throat, but this does not relieve even a very busy general practitioner from the obligation of keeping himself sufficiently informed concerning the progress made in the diagnosis and treatment of the various pathological conditions found in these organs, to be able to recognize them as causal factors in many cases of impaired general health, and to refer such patients to those who are competent to give them attention.

If I were to ask each member of this gathering if he possessed a head mirror and the other simple equipment necessary for even a superficial examination of the ear, nose or throat, I doubt if fifty per cent of you could answer in the affirmative, and I would probably get a similar reply from any audience of men in general practice. The reason for this is not far to seek. Those of us who have seen a number of years go by since we carried our diplomas out from the doors of the medical school, realize that the amount of instruction we received there regarding otology and laryngology was pitifully limited. In those days if a man had an especial bent toward this particular line of work it was considered absolutely essential that he should go across the ocean and take a course at one of the large Teutonic postgraduate schools. Men who could not afford the time and money for this had to rest content with a "six-weeks' course" taught by some of those who had "studied abroad," this instruction often being very superficial and limited in character. As this was the training of the "specialist" it can easily be seen that the general practitioner was expected to know even less about nose and throat conditions.

The war did much to change this state of affairs. Our otologists and larynologists are no longer being "made in Germany" and the necessity of providing adequate training for our young men has turned the attention of the entire profession toward the desirability of a wider general knowledge of these conditions. Another influential factor has been the extension of the theory of *focal sepsis,* first brought into prominence by Billings and Rosenow some twelve years ago. The general practitioner was shown that he must often look for the cause of a disease in a part of the body remote from that which was apparently affected; that a "rheumatic" foot might be cured by extirpating a diseased tonsil, or the removal of a carious tooth clear up an obstinate chronic "appendicitis." We are now beginning to hear that x-raying the teeth and removing the tonsils has become a "fad" and that "focal sepsis" is being held responsible for everything from smallpox to housemaid's knee. The truth really lies between the two extremes and it is here that the general practitioner comes in. He must be sufficiently well-informed to be able to judge whether focal sepsis may be a complicating factor in his patient's condition, and also have enough technical equipment to enable him to examine the ears, nose or throat and be guided by his own judgment based upon personal observation. Unless he can do this he will either overlook numerous vital factors in the cases he is called upon to treat, or he will refer many conditions to specialists which he should be able to cope with unaided, thereby imposing additional burdens—financial and otherwise—on his patients as well as upon himself.

Let us consider the various abnormal conditions of the nose and its accessory sinuses, which may affect the general systemic condition of the individual. Realizing the important part which the nose plays in respiration we can readily appreciate that anything causing variation from its normal condition would necessarily inhibit its physiological functions to a greater or less degree, and result in pathological changes.

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* Read before the Associated Physicians of Hazelton, Pa., January 18, 1922.

The nose—as you are well aware—is divided into two parts by a partition or septum, composed of bone and cartilage covered with mucous membrane. This septum is normally straight, dividing the antero-posterior portion of the nose into two equal parts. In very many subjects, however, it may be curved or bent to one side, so that one nasal chamber is much smaller than the other, or even wholly occluded. Sometimes the deviation will consist of a projection in the form of a ridge which runs along the lower part of the septum from before backward. Again there may be mound-shaped projections from the flat surface of the septum called *spurs,* which may stand out in such a way as seriously to interfere with the inspiration of air on the side on which they occur. Septal deviations are the result of asymmetry of development or of trauma, and it has been my observation that the first cause is relatively common. Sometimes trauma early in life will so alter the relations of the nasal cartilages and bones that it becomes impossible for them to develop along normal lines.

Deviation of the septum—even quite marked in character—may exist for years, indeed, during an individual's entire life, without causing the slightest trouble, or ever giving rise to any symptoms which might serve to draw attention to its presence. It is only when a spur grows out in such a location that it obstructs the passage of air through the nasal chamber, or the septum is so deflected that it comes in contact with the outer wall of the nose or one of the turbinates, thus damning back the secretions which empty from the accessory cavities into the nose, that subjective symptoms will be in evidence. Some of these symptoms are: difficulty experienced by the patient in breathing through the affected nostril, or a feeling as if the nose were "stuffed up" on that side, both of which are indications that some sort of obstruction exists. If the patient gives a history of frontal headache, especially on rising in the morning, it is often indicative of a deviated septum, and chronic rhinitis. Long-standing discharges from the nose or mucopurulent discharges dripping into the throat very often have their origin in the same abnormality. Most of the "catarrhal troubles" of the last generation were doubtless due to a deviated septum.

Anyone who properly understands illuminating the interior portion of the nose so as to make inspection possible, can readily see the defects of shape and position which such a septum presents. It must be borne in mind, however, that the condition is seldom observed without accompanying inflammation and other local signs, and if the septum is seen to come in contact with a turbinate bone it will be necessary to decide whether the trouble is due to the misshapen septum alone, or whether a hypertrophied turbinate may not be in part or wholly the disturbing factor.

The turbinate bones, which are three in number, divide the nasal fossa into three chambers, and from their locations are called the inferior, middle, and superior turbinates. These turbinates are covered with columnar epithelium, beneath which is a mass of erectile lymphoid tissue capable of undergoing great distention, which has caused these tissues to be called "swell bodies." When the turbinates are hypertrophied they partially or entirely occlude the fossæ of the nose. It can easily be seen that their relation to the respiratory function is very important.

The nose has three functions in respiration: to warm, to moisten, and to filter the inspired air. Experiments have demonstrated that no matter what the temperature of the air may have been before it was inhaled, it will be raised or lowered until it closely approximates the temperature of the body. By this means the delicate structures of the deeper respiratory tract are protected against any extreme variation in temperature. The air passing through the nasal chambers receives moisture from the lining mucous membrane, the capacity of the air for receiving being increased by the warming process through which it passes. The "swell bodies" as well as the serum-secreting glands of the nasal mucosa give off moisure, which is rapidly taken up by the expanded air and carried to the lower respiratory tract, where the serum-secreting organs are much less developed.

It has been estimated that approximately one pint of serum is thus transferred from the nasal cavity to the lower respiratory tract in the course of twenty-four hours, and it is probable that a large proportion of this secretion is produced by the erectile tissue located chiefly along the free border of the superior turbinate and the posterior ends of the middle and inferior turbinates, though it is also likely that the glands of the mucosa have a share in the secretion of serum. The "swell bodies" are under the control of the vasomoter nervous system, and under normal conditions regulate the supply of moisture to meet the demands of the organism. That is, if the inspired air is dry the tissues enlarge, becoming just sufficiently active fully to saturate the expanded air contained within the nose; if the air is humid, less activity is necessary on the part of the erectile tissue.

This explains why an obstruction or a diseased condition which prevents the glands and the erectile tissue from responding normally to stimulation from outside atmospheric conditions, will make it impossible for the inspired air to be properly humified in its passage through the nose. And a consideration of what I have just said will also emphasize the gravity of that often disregarded condition known as "mouth-breathing," where the air is inspired directly through the mouth and, of course, gets none of the modifying effects which inspiration through the normal channel has upon it.

The purifying or filtering function of the nasal fossæ is scarcely less important than that of warming and humifying. Hundreds—perhaps thousands—of organisms are drawn into the nose every hour, yet the expired air will be found to be practically germ-free. Great numbers of these organisms are eliminated by the vibrissæ—the coarse hairs in the vestibule, which is that portion of the nasal orifice located in front of the anterior extremity of the inferior turbinate. Those organisms which succeeded in getting by this first line of defense are arrested in the nasal cavity proper where they are rapidly eliminated by the ciliæ and the down-flow of secretion.

The inspired air-current passes upward from the vestibule to the middle and superior meatuses —the fossæ lying beneath the corresponding turbinate bodies—and is thence deflected downward and backward by the middle turbinate and the roof of the nose to the choanæ or openings from the anterior orifice to the nasopharynx, and finally to the epipharynx. The expired current is deflected from the vault of the epipharynx into the choanæ, and thence forward through the middle and inferior meatuses to the vestibule of the nose.

The chief interest which the general practitioner will find in these facts lies in the different effects which stenosis or obstruction in the inferior and superior portions of the nasal chambers will have upon the patient whom he is endeavoring to carry through such an acute infection as pneumonia. An obstructive deformity of the lesser portion of the septum, while it may interfere somewhat with the current of the expired air, will not—if the middle and superior meatuses are free—greatly impede its passage through the nasal chamber on the obstructed side. But if the deformity extends well forward into the vestibule of the nose, it will materially interfere with the inspired air-current by blocking the entrance to the nose. Thus we can comprehend how nasal obstructions may seriously increase the dyspnea in such a condition as pneumonia, and add greatly to the patient's suffering and danger.

Another frequent cause of respiratory obstruction is the presence of nasal polypi. Although the individual nasal polyp is soft, when a considerable number of them are closely packed into the cavities of the nose, the bridge may be widely distended, and external palpation will often reveal an actual separation of the nasal bones. Inspection of the cavity usually shows it to be more or less completely obstructed by these growths. Polypi almost always arise from the anterior wall, most often from the margins of the middle meatus and the cells of the ethmoid labyrinth. They never grow from the roof or the floor of the nose, and rarely from the septum or inferior turbinate. Occasionally a polyp may take its origin in one of the accessory sinuses and protrude into the nose through the natural ostium. This occurs most frequently in the maxillary sinus, the polypi generally passing backward, so that they hang into the post-nasal space and cause obstruction to breathing, the degree of obstruction depending upon the dimensions of the polyp.

Any pathological condition of the nose proper is likely to extend to the accessory sinuses, which are pneumatic cavities in the skull; anatomically, providing for lessening the weight of the bony framework, and physiologically, serving to increase vocal resonance. There are four of these sinuses on each side, the maxillary sinus or antrum, the ethmoid labyrinth, the sphenoidal sinus and the frontal sinus. Any one of these cavities may be the site of a pathologic process and infections of these regions form one of the gravest conditions with which the otolaryngologist is required to deal. If the frontal sinus is involved the patient will usually complain of pain over the forehead and in the eyes, but sometimes the headache is generalized and often accompanied by a slight rise of temperature. When you get a history of chronic rhinitis accompanied by persistent frontal headache the diagnosis of frontal sinusitis should at once be suggested. If the ethmoid or sphenoid is the seat of the trouble you will usually observe the customary signs of chronic rhinitis—that is, hyperemia and turgescence of the turbinates and mucous membrane of the nose, and the abundant discharge of mucopurulent fluid, with impaired nasal respiration and the other discomforts arising from nasal obstruction; and in addition you will hear a history of pain referred to the upper portion of the nose or "somewhere behind the eyes." Often the nasal discharge will have a fetid odor. Inspection will usually reveal a deflected septum or the presence of nasal polypi.

Indeed, the presence of polypi should always suggest ethmoiditis or sphenoiditis, for necrotic bone is always found beneath the growths. Because of the relation between the optic nerves and the ethmoid cells, eye symptoms are commonly prominent when there is trouble in that sinus, so we are almost sure to have indications of eye-pressure or ocular inflammation.

We all realize the importance of a more intimate knowledge regarding tonsillar conditions and yet how frequently the tonsils are overlooked as foci of infection, simply because there is no special history of repeated attacks of tonsillitis or because upon examination the tonsils themselves are not found to be enlarged. Personally, I regret—despite the volumes written regarding diseased tonsils and their importance in relation to the general health—that more careful attention is not given to these important structures. The more I see of the pathological conditions caused by diseased tonsils the more I regret that a more careful study is not given to them, not only by the general practitioner but by specialists in all branches of medical science.

In times past, the tonsils were not seriously considered unless there was a history of repeated attacks of tonsillitis or they were found to be especially large. It has been my personal experience that a small submerged tonsil might often be responsible for no end of trouble, and when it had been removed, the patient would say, "Since my tonsils were taken out I feel entirely different and my health has greatly improved."

Before describing the method I have employed for several years past in examinations of all tonsil cases, I wish to call attention to an article which appeared a few months ago in one of our medical journals, by one of our specialists. In this article he stated he had his tonsils examined in one of the Western hospitals and was told they were not diseased. Upon his return home a colleague examined his throat and by properly-made pressure on the tonsils was able to express several drops of pus from each side, proving conclusively that the organs were diseased and required removal.

It has been my routine custom for some years past to make pressure while examining tonsils, and whenever pus or foul-smelling caseous material exudes, I always advocate removal. The good results obtained in hundreds of cases have most satisfactorily proved my contention.

Because of the important rôle the ear, nose and throat can play in the general health I earnestly urge those of you who have neglected this particular field to make a more careful examination of each and every patient, and if you do so I am sure your efforts will not only be rewarded by the improvement in all thus afflicted, but the praise and increased gratitude of your patients will make you feel that your time was indeed well spent.

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ABSTRACTS

CONSIDERATION OF HYDRAMNIOS WITH ESPECIAL REFERENCE TO THE ETIOLOGY OF THE CONDITION

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The term hydramnios is used to indicate an abnormally large accumulation of fluid within the amniotic cavity. The dividing line between the normal and the abnormal accumulation of fluid is more or less arbitrary. Authorities are generally agreed, however, that from one to two pints at the end of pregnancy may be regarded as normal, that three pints or more is certainly abnormal. Enormous quantities of fluid have been reported: Kuestner had a case with 30 pints of fluid; Wilson reported 56 pints in one case; and Schneider recorded two cases having 60 pints of fluid each, in women pregnant five and six months, respectively.

Hydramnios occurs once in 100 to 200 cases. It occurred 124 times in 13,000 consecutive labors in Shauta's clinic, an incidence of 1 in 105 cases; and Jellett reported 131 cases in 24,818 confinements in the Rotunda Hospital, or 1 in 196 cases.

Etiology of Hydramnios: In considering the cause of the condition the first question which presents itself is as to the source of the amniotic fluid in normal cases. Most authorities believe that the fluid is a transudate from the maternal and fetal blood vessels with an admixture of fetal urine in varying proportions. In considering the fluid as a transudate, it is evident that after passing the vessel walls the fluid from the maternal vessels must pass through both amnion and chorion to get into the amniotic sac, whereas that from the fetal vessels must pass through the amnion only. The amnion has been regarded as a sort of glandular structure with the amniotic fluid as its secretory product.

In considering hydramnios from the standpoint of etiology, the subject will be discussed under three headings, depending upon the sources from which the fluid is supposed to come—the maternal, the fetal, and the amniotic.

A. THE MATERNAL SOURCES OF HYDRAMNIOS

Hydramnios may be produced by certain alterations in the maternal organism, especially that of the vascular system, as in leukemia and chronic anemia, particularly when associated with chronic nephritis and severe cardiac disease. It may, therefore, be found as a part of a general dropsical condition—that is in association with serous effusions elsewhere in the maternal body. The demonstration by Wolff that nephrectomy in pregnant rabbits is followed by increased renal activity in the fetus and the production of hydramnios, indicates, according to Williams, "the possibility of a similar occurrence in pregnant women suffering from serious renal disease." From my own observations I am convinced that chronic anemia in the mother, plus the very common hydremia of pregnancy is a not uncommon cause of hydramnios. Visceral syphilis in the mother "may be followed by edema of the placenta with increased transudation into amniotic cavity" (Williams); and according to Edgar, maternal diabetes may be followed by glycosuria with its accompanying polyuria in the fetus and the production of hydramnios.

B. FETAL SOURCES OF HYDRAMNIOS

(1) *Obstruction in the fetal circulation* causes increased pressure in the vessels of the cord and passive congestion of the placenta, and is followed by extensive transudation into the amniotic sac from the surface of the cord and from the fetal surface of the placenta.

In cases reported by Truzzi and von Winkel, velamentous insertion of the cord was responsible for the condition; and in Mangiagalli's case hydramnios in one of twins was found in association with a short cord—28 c.m. long—and velamentous insertion. According to Fehling there is a quite constant relationship between hydramnios on one hand and the length of the cord and the number of coils, on the other hand. Extensive tortion of the cord has been assigned as the cause in many recorded cases. Placental tumors, almost exclusively chorioangiomata, may cause hydramnios through circulatory interference. Leopold saw a case in which stenosis of the umbilical vein 6 c.m. from the placenta was the cause of an extensive hydramnios. Bar reported a case of phlebitis of the umbilical vein as the cause. Syphilis of the fetal liver, either in the form of a gumma or diffuse connective tissue formation causing compression of the afferent branches of the umbilical vein entering the liver, has been assigned as the cause in reported cases. Bar had a case of hydramnios due to insufficiency of the tricuspid valve and stenotic changes in the pulmonary arteries. In Woerz's case the obstruction was dependent upon a rhabdomyoma causing almost complete obliteration of the right auricle of the heart. Nieberding reported a case of hydramnios dependent upon stenosis of the ductus arteriosus with secondary hypertrophy of the heart and kidneys; and in Lebedeff's case the condition was due to stenosis of the aortic opening.

(2) *Malformation of the Fetus:* Hydramnios is very commonly found in association with fetal malformations as anencephalus, hydrocephalus, spina bifida, exstrophy of the bladder, cleft palate, harelip, etc. In these conditions the malformation is the cause of the hydramnios, the fluid having its origin in the outpouring of serum from tissues and structures deprived of their usual coverings, as the spinal canal, ventricles of the brain, serous and mucous surfaces, as the peritoneum, pleura, and mucous membrane of the bladder in exstrophy of that organ.

(3) *Uniovular Twins:* When hydramnios occurs in association with two ova twins, the fluid is usually increased in both amniotic sacs. In uniovular twins, on the other hand, the excessive accumulation of fluid is always confined to one sac—usually the upper sac—while in the other sac there is a relatively small amount of fluid, occasionally none at all.

C. AMNIOTIC SOURCES OF HYDRAMNIOS

While there is apparently no proof that the amnion under physiological conditions is a secretory organ and the source of the liquor amnii, there is very definite evidence that under abnormal conditions it may be responsible for a very rapid and excessive accumulation of fluid. Edgar, for example, points out that acute inflammation of the amnion has been observed following a blow or kick on the abdomen of the pregnant woman.

CASE REPORTS ILLUSTRATING FETAL AND MATERNAL SOURCES OF HYDRAMNIOS

Case 1.—Mrs. J. J. B., 31 years old; delivered two and a half years before of a healthy boy baby weighing 9 pounds and 9 ounces, after being in labor but 5½ hours. Last menstruation preceding the pregnancy under consideration was on June 16, 1916; estimated date of confinement was March 23, 1917. On December 1, 1916, patient entered the hospital suffering from an enormous distension of the abdomen, which had developed rather rapidly during the last three weeks. Notwithstanding the fact that she was but six months pregnant, the fundus of the uterus was at the ensiform, there was marked protrusion of the abdomen, which had a circumference of 110 c.m. through the umbilicus; the uterine walls were exceedingly tense and tender on palpation, fetal heart sounds could not be heard and fetal parts could not be palpated. The patient was the picture of great distress and in a serious condition. For almost a week she had not been able to retain any food and on admission vomited even water; she was unable to lie down and had had no sleep for 24 hours. Her temperature was 102, pulse 130.

It was plain that the patient could not long survive without the termination of the pregnancy. The cervix was effaced and the os dilated sufficiently to admit two fingers. The membranes covering the os were intact and flaccid, and within a small fetal head was readily palpated. As it was now clear that the excessive accumulation of fluid was not in the presenting sac, the existence of a second baby in the upper hydramniotic sac was easily established. Following rupture of the presenting sac but a few ounces of fluid was discharged. During the search for the second sac it was felt descending, dissecting its way between the first sac and the uterine wall. It soon appeared at the os and was ruptured. There was at once a gush of fluid which was discharged rapidly until 16 pints were obtained. The patient was immediately relieved and improved rapidly. She went into labor 24 hours later and was delivered without difficulty of two small macerated baby boys. The baby in the upper sac was perceptibly the larger. There was one placenta, a common chorian and two amniotic sacs, establishing the diagnosis of uniovular or homologous twins. The patient made a rapid and uneventful recovery and two years later was delivered of another large, normal boy baby.

The hydramnios, in this case, was dependent upon the presence of uniovular twins, as already described.

Case 2.—Mrs. D. H., 27 years, delivered two years before of a boy baby weighing 8 pounds and 10 ounces; convalescence prolonged by a low-grade pelvic phlebitis; made a good ultimate recovery and was apparently in good health for a year. She began the present pregnancy in poor condition: H. 65%, R. B. C. 4,000,000, W. B. C. 5,900, B. P. 92-58-34. Her last previous menstruation was on September 19, 1919; confinement expected about June 26, 1920. Under iron and arsenic and careful regulation of her diet the patient improved remarkably; the anemia disappeared and she appeared to be in excellent health on April 7, 1920, when she weighed 138 lbs., a gain of 26 lbs. since the previous December 17th. When she appeared on April 28th, she had gained almost 11 lbs. since her last previous visit three weeks before. She stated that during the previous week her abdomen had increased so rapidly and she was so uncomfortable that she was sure something was wrong, especially since she had not felt fetal movements during this time. She was at this time eight weeks from term. The fundus of the uterus was at the ensiform, the abdomen gave the appearance of pregnancy at term, the circumference being 100 c.m. The fetal parts were palpated with difficulty. Fetal heart sounds were heard but sounded distant and at times indistinct. When the patient returned a week later she had gained almost 5 lbs., the circumference of the abdomen was now 108 c.m., fetal heart sounds could not be heard and fetal parts were not palpable, the uterine wall was exceedingly tense and there was extensive edema of the lower extremities extending to the groins. Rectal examination showed the cervix effaced, os open to size of a silver quarter and the membranes under great tension. The patient was sent home and instructed that if the membranes did not rupture within 48 hours she was to enter the hospital for interference. On the following evening just after retiring, the membranes ruptured with the rapid discharge of a large amount of fluid which soaked the bed and went through onto the floor. The patient was at once relieved. She entered the hospital about 11 p. m. At 8 a. m. next day, the patient was having a few weak pains at irregular intervals but she was not in labor. At this time the fetal heart sounds, which had remained good throughout the night, were slow and very irregular and it was evident that the baby was dying. A hasty vaginal examination was made with the thought that a prolapsed cord might be responsible for the condition of the baby. The os was about the size of a silver half-dollar, the head was settled well into the pelvic inlet and impinged on the cervical ring all around, the cord was nowhere to be felt. The head, however, was everywhere edematous, as far as it could be palpated, in spite of the fact that the patient was as yet not in active labor. A diagnosis of fetal monstrosity or other abnormal condition was made and no attempt was made to rescue the baby. Labor began at 3 p. m. of that day—May 8, 1920—and the baby was born spontaneously at 9 p. m.—a girl, 43 c.m. long and weighing 8 lbs. There was present a general subcutaneous edema, the baby was dead and there was beginning maceration.

At the autopsy, performed by Dr. Richey at Mercy Hospital, a most unusual condition was found, which was the cause both of the hydramnios and hydrops of the fetus. The abdomen was filled with a blood serum. There had been a spontaneous rupture of the liver, and on the left side in the posterocentral portion of the diaphragm there was a congenital opening, admitting three fingers, which was the site of a diapragmatic hernia containing the spleen, the small intestines and the entire colon. Through the displacement of the intestines and the resulting traction on the portal and umbilical veins, the anasarca of the fetus and the transudate into the amniotic cavity were produced.

This patient was delivered again a month ago of a 9-lb., 13-oz. boy.

Case 3.—Mrs. A. W. M., 35 years old, confined previously at her home in Ohio, on February 7, 1916; long labor, high forceps, 10 lb. boy baby, stillborn.

Patient seen April 1, 1921. She was pregnant about seven months. The fundus was at the ensiform, there was an enormous excess of amniotic fluid, the circumference of the abdomen was 105 c.m., fetal heart sounds could not be heard and fetal parts were not palpated. Patient entered Mercy Hospital on April 4th, for observation. Blood examination some days after admission showed: Hgb. 43%, R. B. C. 2,500,000, W. B. C. 8,000. The diagnosis of twins was confirmed by x-ray pictures made by Dr. Robinson. Patient was very weak, was able to retain but little food, slept poorly and was exceedingly uncomfortable.

Because of the marked anemia and the great probability that it had much to do with the hydramnios, transfusion was decided upon and was given by Dr. MacLachlan, using the patient's father as donor. The patient was given 200 c.c. of citrated blood on three different occasions about a week apart. Five days after the first transfusion, the Hgb. was 68%, R. B. C. 3,270,000, and the W. B. C. 9,000; the patient was more comfortable and there did not seem to be any increase in the amount of fluid. Five days after the second transfusion the Hgb. was 78% and the R. B. C. were 4,200,000. There was a decided decrease in the amount of the amniotic fluid, patient was eating and sleeping well, bowels were moving regularly and fetal heart sounds were heard for the first time. Following the third and last transfusion the Hbg. was 80%; no increase in the R. B. C. Improvement from this time on was little less than marvelous, and as the anemia disappeared the amniotic fluid decreased and the babies developed normally. Patient was delivered at term on June 14, 1921, of twin boys weighing 6 lbs., 11 oz., and 6 lbs. 3½ oz., respectively. At birth there was less than a pint of fluid, about equally divided between the two sacs. The twins were of the two ova variety, there being two separate placentæ.

The mother and babies left the hospital on July 6th, in excellent condition. The hemoglobin estimate at this time was 85% and there were 4,500,000 red cells.

It is of interest to note that this patient's mother died of pernicious anemia some years before.

In any discussion of hydramnios, emphasis should be placed upon several points:

1. That when the condition is once established treatment is of no avail, if the cause resides within the fetus.

2. That if conditions in the mother are responsible, appropriate treatment may give brilliant and even unexpected results, especially in anemia and perhaps also in syphilis.

3. That the interruption of pregnancy in this condition may be necessary to save the life of the mother. This applies especially to cases in which the hydramnios is dependent upon one ovum twins and in which the second or upper sac contains the excess fluid, as is usually the case. In such cases spontaneous rupture of the bag of waters may not be expected.

4. That in cases of hydramnios every effort should be made to determine the cause upon which the condition depends. At times this may be done from positive findings in the mother; usually it is best accomplished by exclusion. For example, the maternal causes of hydramnios are readily detected if one but remembers what they are: leukemia, chronic anemia, cardiac and renal disease, syphilis and diabetes. If twins are present and the fluid is confined to one sac, one ovum twins may be strongly suspected, and if the fluid is in the upper sac one ovum twins become almost a certainty. As between a fetal monstrosity and obstruction in the fetal circulation as causes of the condition, a diagnosis cannot be made and is not important. A diagnosis can of course also not be made in those cases in which more than one cause is operative: as a fetal monstrosity and one ovum twins; syphilis in the mother and a fetal monstrosity; renal disease in the mother and one ovum twins, etc. In any event the only hope of successful treatment depends upon the diagnosis; and most important and the most successful of all is the preventive treatment which depends upon the recognition early in pregnancy of conditions in the mother which may not only in themselves be the cause of hydramnios, but may also be responsible for the development in the fetus of sources of the condition.

STREPTOCOCCAL GENERALIZED INFECTION; WITH REPORT OF TWO CASES

Case One

Mr. D. C. S. Age 34. Bank auditor.

In December, 1915, during an epidemic of tonsillitis, all the members of the patient's family, at one time or another, became ill. He finally succumbed and had a moderately severe attack.

His recovery was slow and had progressed to the point where he still had a slight daily rise of temperature to from 99° to 99.5°, with redness of tonsils and pharynx. Feeling better he insisted on returning to work. In a few days, pains and aches in the joints developed, but disappeared on further rest in bed, warmth, etc.

Once free from pain he again insisted on returning to work, notwithstanding the fact that his temperature had not returned to normal, nor had the redness left his tonsils and pharynx.

After a few days' work, pain and tenderness appeared on inner aspect of his right thigh, with elevation of temperature. Phlebitis of his right saphenous vein became frank, spread and involved the femoral on that side, and later phlebitis developed suddenly in the left leg.

There appeared on different occasions sudden pain in the left thorax, with spitting of bright red frothy blood, with no very definite signs of lung involvement. There were a few crackles on the left side. This persisted a few days and cleared. No definite cardiac involvement was ever made out. He developed a very slight systolic blow at the apex.

Early in February he suddenly passed blood in the urine. The microscope showed blood, pus, diplococci and a variety of casts in the urine. Slowly this cleared. An edema of the lower extremities, however, crept up to the waistline. The patient ran a moderate temperature, more or less irregular. There was, during the height of his illness, a restlessness, sleeplessness, with an intense irritability and fear of the least physical discomfort.

Another most interesting complication was the sudden appearance, from time to time, of bright red painful spots on one or the other foot, followed by a red line running up the leg as far as the knee, possibly due to minute septic emboli in the skin, with subsequent lymphangitis. These also cleared later.

In May, 1916, his phthalein output was 45% and 15% with specific gravity of 1.010; faintest trace of albumin; faint trace of occult blood, and a few finely granular casts. In January, 1920, urine was practically normal.

Case Two

Mr. J. B. S., aged 26, on January 26, 1922, developed mild right-sided, middle lobe pneumonia. Recovery was prompt and uneventful.

March 14th, he was seen for pharyngitis. His apparent recovery was prompt.

March 23d, he had a return of his pharyngitis. On the 25th, there was a thick purulent discharge from his nasopharynx, with temperature. There was marked pallor and swelling of the face. Heat and acetic acid showed an extremely heavy albumin reaction in his urine. His condition rapidly became worse. Larynx, bronchi and left lower lobe of lung became involved in succession. The purulent discharge from his nasopharynx, and the purulent expectoration continued. The condition of his ankle rapidly became worse until April 2d, when it was freely incised. Cultures from the ankle showed streptococcus hemolyticus. The discharge became purulent and most profuse from the subcutaneous tissues and the ankle joint. Profuse bleeding continued from the kidney. Temperature ranged from 100.5° to 104°.

About April 10th, there developed a marked rubelliform rash over chest, abdomen, back and extremities, more marked on dependent parts. This later cleared, and resulted in an exfoliation that lasted for weeks.

He slowly improved, and is now at work. His urine shows specific gravity 1,016, faint cloud of albumin, no blood, no casts. Frederick B. Utley, *Secretary.*

STATE DEPARTMENT OF HEALTH HARRISBURG, PA.

SUMMARY OF REPORT ON THE STATE TUBERCULOSIS WORK, MADE TO THE COMMISSIONER OF HEALTH OF PENNSYLVANIA*

A. P. Francine, M.D.
Chief, Division of Tuberculosis

The effort has been made in the administration of this Division:

(1) To cut down inexpedient and burdensome expenditure.

(2) Thus to save money to enlarge the scope of this service; that is, to carry it to localities that were not being reached as is necessary.

(3) To increase the actual working efficiency of the dispensary services.

(4) To promote and stimulate extradepartmental effort through antituberculosis and other philanthropic bodies.

(5) To stimulate local counties to provide sanatorium accommodations for their own tuberculous sick, particularly the far advanced cases, near their own homes, through a bill introduced in the Legislature of 1921.

This whole program was made possible through the confidence and backing of the Commissioner of Health, exercising the broad policy of making and holding a subordinate responsible in this work by leaving him a free rein to go ahead. A really remarkable success has been achieved, as explained categorically below. It was also greatly aided by the coöperation of voluntary philanthropic organizations, and by borough councils.

(1) It appeared clearly inexpedient for the Department to pay rents and certain other charges for its dispensaries, that is, to support entirely a local institution run for local community welfare. A campaign was undertaken to show local communities the part they should bear and the response they should make. This involved the visiting of these communities and addressing representative groups, and concerned the furnishing of free quarters for the state clinics and certain other overhead charges like light, heat, and janitor service.

This met with uniform success and was accomplished without the closing of a single clinic. This relieved the Department of a monthly overhead charge for rent, etc., which meant a very material reduction in its expenditure, and amounted in six months to $23,809.92. Rents were taken off in 44 dispensaries.

(2) This enabled the Department to proceed with the essential work of carrying this service to other communities, with the result that 22 new clinics were opened without overhead charges to the Department. The Department pays the doctors a moderate fee and furnishes supplies: educational (literature), preventive (sputum cups and napkins, and a few simple drugs) and the necessary forms. It also supplies furniture, desk, scales, filing cabinets and chairs, where necessary. These remain state property, and are carefully inventoried in the Division of Supplies.

(3) Dispensaries were quite widely inspected and the personnel instructed in exact detail of their work, and in a number of instances the physicians in charge were relieved and replaced by younger, capable men interested in the work. It is not out of place to add that the chiefs of our clinics are showing a wide interest, not only in tuberculosis work, but in broader aspects of public health work, and are recognized everywhere as most active and successful members of the profession, and most useful in community welfare.

Here it may be pointed out that in 1918, with 114 clinics, there were 71,048 dispensary visits; while in 1921, with 94 clinics, there were 71,696 visits.

Outlining, merely, the dispensary report for 1919, 1920, 1921, and first six months of 1922, the figures are as follows:

In 1919 there were 70,056 dispensary visits. These visits were made by a total of 15,158 individual cases, and there were on hand at the beginning of 1919, 6,785 cases. There were 114 clinics.

In 1920 there were 72,932 dispensary visits. These visits were made by a total of 15,936 individual cases, and there were on hand at the beginning of 1920, 6,942 cases. There were 98 clinics.

In 1921 there were 71,696 dispensary visits. These visits were made by a total of 17,706 individual cases, and there were on hand at the beginning of 1921, 5,290 cases. There were 94 clinics.

In 1922, during the six months' period from January 1st to July 1st, there were 37,795 dispensary visits. These visits were made by a total of 10,870 individual cases, and there were on hand at the beginning of 1922, 4,229 cases. There were 93 clinics. So that the year 1922 bids fair to show the most far-reaching work of this Division, for it will be noted that for the first six months of 1922, with fewer clinics, more work has been done proportionately, and since June we have opened and are getting in working order sixteen new clinics.

The principle of these state clinics is not static, but dynamic. That is, the effort through the nursing force is continuous to hunt up and get new cases in for examination, education, and sanatorium care; and not alone apparent cases of tuberculosis, but anyone who shows signs of failing health, particularly anemic or run-down children. This applies only to the indigent or at the request of physicians. There is also a strong effort being made to enlist the active coöperation of the employers of labor.

It should further be noted that on account of the great extension of public health activities of the nurses, in baby welfare, venereal and other work, they can no longer give anywhere near as much time to the tuberculosis work.

(4) Close touch has been kept with local philanthropic bodies by letter and by personal visits, with the result that these are uniformly giving the Department the heartiest coöperation, not only in referring cases, but in advertising this work, and in many instances helping financially.

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*This would appear to concern every physician in Pennsylvania interested in modern medicine and public health, and it is for this reason that it is published.

(5) On account of the overcrowded condition of the sanatoria there was a waiting list of nearly a thousand and it took six to nine months for admission, thus defeating the usefulness of these institutions in the necessary delay for the admission of early favorable cases. It was seen that the principle of local communities, i. e., counties, providing a certain amount of sanatorium care for their tuberculous sick, particularly the far advanced cases, near their homes was the only solution and the proper one. Pennsylvania with its 2,000 state-controlled beds was much worse off in this relation than the other states which had followed this policy of local care. This principle had inhibited local effort, and no state institution in this country, so far as I know, receives far advanced cases. By inaugurating the proper policy of not receiving far advanced cases, which could not be benefited, but would occupy a bed for many months, the efficiency of the sanatoria has been enormously increased, and many more children and curable types have been treated in 1921 and 1922 than heretofore. It now takes only from 2 to 3 weeks for the admission of a case.

Outlining the sanatoria report for 1919, 1920, and 1921, the figures are as follows:

Mont Alto	*1919*	*1920**	*1921*
Patients on hand	526	675	448
Patients admitted	1,223	790	956
Patients treated ....Total	1,749	1,465	1,404

Cresson	*1919*	*1920*	*1921*
Patients on hand	494	681	663
Patients admitted	1,310	1,162	1,141
Patients treated ....Total	1,804	1,843	1,804

Hamburg	*1919*	*1920*	*1921*
Patients on hand	304	410	435
Patients admitted	1,230	919	957
Patients treated ....Total	1,534	1,329	1,392

(6) The Department introduced a bill providing for a referendum to the people of a county as to whether they wished the county to build and maintain a local institution for tuberculosis. This has met with a very hearty response on the part of the people, and the county commissioners; and of the seven counties submitting this to a vote at a general election all have passed it by large majorities. Five of these counties have already bought sites, and plans are in progress for the erection of model institutions. In two others sites are being selected.

In November, 1922, four other counties voted for sanatoria by large majorities, namely: Schuylkill, Erie, Dauphin, and Westmoreland. This local county hospital plan is the biggest single step in the campaign against tuberculosis since the establishment of this Division.

(7) The Chief of the Division has made numerous addresses, usually informal in character, and written several papers upon the work of the Division. Without going into great detail, in this relation might be mentioned addresses to the Rotary Clubs of Wilkes-Barre, Mt. Carmel, Sunbury, and Pottsville, the Chambers of Commerce of Lewistown, Altoona, etc., the State Association of County Commissioners at Altoona, the State Medical Association, the meeting of the National and local Pennsylvania Antituberculosis Societies, Federation of Women's Clubs, the Women's Club of Harrisburg, etc.

(8) The Department has now 110 state clinics, with prospects of opening five or six in the very near future, and this policy will be carried out.

(9) The death rate from tuberculosis in all forms has fallen from 151.4 in 1918, to 91.6 per hundred thousand in 1921, and for tuberculosis of the lungs from 133.3 in 1918, to 80.0 in 1921.

Morbidity and mortality figures for Pennsylvania are interesting:

	1917	*1918*	*1919*	*1920*	*1921*
Cases of tuberculosis, all forms reported	11,243	10,115	9,725	8,144	7,083
Deaths from tuberculosis of the lungs	10,042	11,257	8,971	8,011	7,001

This shows that cases are not being generally reported, as the incidence of the disease as reported is not sufficient to support the yearly mortality. The decline of the death rate from tuberculosis of the lungs during the five-year period 1917-1921, inclusive, has been more pronounced than the decline of other reportable diseases, or the general death rate.

For tuberculosis of the lungs the decline was 33 1/3 per cent, for all other reportable diseases it was 31 per cent, and for deaths from all causes it was 20 per cent.

COMMUNICATIONS

Editor, The Pennsylvania Medical Journal,
Harrisburg, Pa.

Dear Sir: An efficient and inexpensive high tension stethoscope is made by cutting off about an inch from the finger of an old rubber glove and stretching it over the bell end of an ordinary stethoscope.

With it, heart sounds can be heard through vest, coat and overcoat, and fetal heart sounds are heard easily any place on the mother's abdomen.

Francis V. McGowen, M.D.

Philadelphia, November 21, 1922.

THE GREATEST GIFT

Of all the gifts Christmas has bestowed upon the world the greatest has been the ideal of the "brotherhood of man," that man cannot live to himself alone, that advantage to self must be a component part of the general advantage if it is to result in lasting gain. And in these days of strife and turmoil, when half the world is plunged in misery, famine and death as a result of the working out of selfish ambitions, of personal and national greed for property and power, one cannot but wish that the message of the Christmas Angels, "Peace on earth, good will toward men," could so impregnate the minds of men that they would be impelled to pause in their wild carnival of hatred and let love and brotherly kindness rule, even though only for the space of the Christmas season. Can we find a greater travesty on Christmas than the conditions now prevailing in the international situation—conditions of distrust and hatred and persecution, with nation rising against nation and race against race?

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*In 1920 a large 200-bed hospital at Mont Alto was closed for lack of funds and subsequently taken over by the United States Veterans' Bureau.

Even in our own America we find class hatred arising. Healthful and friendly competition are being transformed—under the influence of men who are working for their own selfish interests, not for those of the human beings whose lives they hold in their hands—into sullen and bitter mutiny against conditions that would yield to a spirit of mutual helpfulness, but that will only be made a thousand times worse by the application of force. We are playing with a dangerous weapon in these days; organization may be made a mighty power for good, but like flood or fire, will surely destroy the civilization it built if allowed to become the master of the men who would employ it.

So we must never, in our multiplicity of medical organizations, lose sight of the real spirit of organization — coöperation for the mutual benefit of all concerned, both inside and outside of the organization. We must keep before us constantly, as our pillar of fire by night and our pillar of cloud by day, the ideal of helpfulness to humanity, for which this great medical organization was founded. We, who are blessed with a greater than average share of the understanding of things as they are; we, who are a little closer to the Infinite than is the average man, must never forget that we are our brothers' keepers; that with our greater opportunities also come greater obligations. We must not let our organization be subverted to the base object solely of personal gain, but must do our share to keep alight the torch of truth, lest civilization be lost and humanity be forced to wander unguided through another "dark age" of ignorance, suppression and misery. Thus, and thus only, can the spirit of the Christmas message prevail: "On earth peace, good will toward men." T. P.

The United States Veterans' Bureau offers a special course in neuropsychiatry to a certain number of qualified physicians, on condition that upon completion of such course they will continue in the service of the Bureau for a period of at least two years thereafter.

The policy of this Bureau is to provide expert medical attention for the disabled veterans so that everything possible may be done to restore them to health and proper status in civilian life. To maintain this policy in the opening up of new hospitals, and being unable to secure the required number of specialists in nervous and mental disease, it becomes necessary to instruct a staff of our own for this line of work. To this end a systematic and comprehensive course in neuropsychiatry has been carefully outlined, consisting of 176 lectures and demonstrations and some 440 hours of clinical and laboratory work. Each course will be for a period of about four months. There will probably not be more than two courses annually. Courses will be offered as long as it appears necessary in order to meet Bureau requirements. Instruction will include the necessary reviews of the fundamentals, followed by clinics and lectures on the various forms of nervous and mental diseases, including endocrinology. Special attention will be devoted to diagnostic methods, the general care of patients, and methods of treatment. Students will have actual experience in practical work. General problems of hospital administration, medicolegal questions, rehabilitation methods, psychometric examinations and other related matters will be adequately dealt with.

The main part of this course will be given at St. Elizabeth's Hospital, a government institution for the insane at Washington, D. C., which offers unusual and unexcelled facilities for such work. There are nearly 4,000 patients and case histories of more than 20,000 discharged patients immediately available for study. Here are all classes of nervous and psychotic diseases, while other public hospitals in Washington will provide abundant clinics in so-called functional diseases, borderline cases, and the milder types.

The teaching staff that has been selected to give this course in neuropsychiatry is significant. Besides the members of the staff at St. Elizabeth's there will be lecturers from the medical departments of the Army, the Navy, the Public Health Service, the United States Veterans' Bureau and the U. S. Department of Agriculture. A number of America's most eminent neurologists and psychiatrists will come to deliver lectures on special topics.

As the number of students that can be accommodated is limited, early application for each course is desirable. The course will start on January 4, 1923. *Other things being equal, members of the course will be selected in the order of their application.*

Students who are authorized to take the course who are not already in the employ of the Veterans' Bureau will receive a salary of $166.00 per month, with no allowances, while taking the course.

On satisfactory completion of the course members will be recommended for the grade of Passed Assistant Surgeon in the Reserve Corps of the U. S. Public Health Service, or they will become eligible for employment as Class "B" physicians under the U. S. Civil Service Commission and assignment to duty with the U. S. Veterans' Bureau. These salaries range from $3,000 per year, upward.

Postgraduate Schools for Veterans' Bureau Physicians.—In order to render the best possible professional care and treatment to disabled ex-service men, Colonel C. R. Forbes, Director of the United States Veterans' Bureau, announces that he is about to establish postgraduate schools for physicians now connected with the Bureau and those who wish to join this Service.

There will be two schools for the teaching of the diagnosis, care and treatment of pulmonary tuberculosis, one at Fitzsimmons General Hospital, Denver, Colorado, and the other at U. S. Veterans' Hospital No. 41, New Haven, Conn. The courses at these hospitals will be uniform and will run simultaneously. Each course will last two months, and will include collateral branches of medicine such as pathology, x-ray plate interpretations, physiotherapy, etc.

Before attending the schools physicians now in the Service will be given a preliminary course which will be established under competent instructors in each of the veterans' hospitals for tuberculosis. They will then be selected to take the postgraduate course at Fitzsimmons or New Haven. Specialists not connected with the Bureau will be invited to attend and give lectures to the students. It is anticipated that at least three courses of two months' duration each can be run during the year in the East and West.

As more physicians with special knowledge of tuberculosis than are already in the Service will soon be needed it is hoped that this demand will be supplied from the profession at large. Applications for admission to the schools with a view to service in Bureau hospitals may be sent to Colonel C. R. Forbes, Director, Veterans' Bureau, Washington, D. C., Attention Clinical Director of Tuberculosis.

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December, 1922

EDITORIALS

CHRISTMAS AND THE NEW YEAR

The close of a county medical society meeting a short time ago found four of its members, all of whom had passed three score years, discussing the flight of time. The consensus of opinion was that with them in a business and social way, time was going as fast as it ever had.

We can recall how anxious we were in our youth for the days and years to pass, so that the future would open up the possibilities which we anticipated. As middle age approached we still looked for the future to bring us greater opportunities. When we find men of ripe years still feeling the urge of business and the sense that the days and years are still going rapidly, we realize what a very active era is this one in which we are living. And we find this condition has been manifest in the work of the Pennsylvania Medical Journal during the short time it has been under State Society management.

The time will soon arrive when the Christmas bells will ring out their joyous sounds throughout the land; home gatherings will be the rule, and each of us will be occupied with our Christmas pleasures and duties. A few days will intervene, when the calendar of 1923 will appear on desk and wall.

In retrospection of the past year's work we have nothing to say. The pages of the Journal are their own evidence, both of those things that have been lacking and of those things that have been achieved. Whatever the defects have been, they offer an opportunity to those in our ranks who have the ability to supply us with material that will remedy these faults. The Journal should be, and is, an open forum for every member who has something worth while to present.

Our Christmas wish is that the numbers of the Journal for the New Year will be filled with material such as will place ours in the foremost rank of state journals in the country—and all for the benefit of our readers. As the New Year approaches, when it is the custom to turn over a new leaf, may that leaf be filled with the resolve upon the part of each member to read the advertising pages, to coöperate in securing news items, as well as other copy, which will make the subsequent numbers of greater interest and more vital importance than those which have appeared in the old year.

The wish of the Editor is that each shall have a Merry Christmas and a Happy New Year.

PREMEDICAL EDUCATION

At the recent meeting of the Medical Society of the State of Pennsylvania, held at Scranton, a resolution was offered bearing upon the timely and important subject of premedical education. The very important fact was pointed out that "it is almost impossible to get a young physician to locate in a rural community." The reason for this unfortunate condition of affairs was stated to be "the present standard of premedical requirements," which were said to be excessive and "which prevent many desirable young men from taking up the study of medicine." The resolution based upon these assumptions asked the House of Delegates "to recommend to the Pennsylvania State Board of Medical Education and Licensure that they use their influence with the medical colleges of the state to modify the present requirements and make one year of premedical college work the standard, instead of two years."

The committee to which the resolution was referred reported as not approving, for the reason, among others, "that the amount of time spent in preparation for the study of medicine is not the determining factor in the selection of a location to practice." The report of the committee was accepted.

Nevertheless, back of the resolution as presented there are some important facts which must, soon or late, be faced. It is getting to be continuously more and more costly in time and money to prepare for the practice of legitimate medicine. The writer has two sons who refused to permit him to assume the burden of carrying them through so many nonproducing years while they were preparing for their life's work. And the writer hesitated to urge more insistently that these sons change their minds and pursue this "greatest of all professions"—not because of the time and money required, *but* because of the uncertainty of the future with reference to the practice of medicine.

On the one hand is the spectre of State Medicine—socialized medicine; on the other is the growing disposition on the part of state legislators to legalize cults, giving to them the privilege of the honors and emoluments accruing from the practice of legitimate medicine, without requiring from them the necessity of properly preparing in time and study for their responsibilities. We have, thus, the incongruous situation of entrance into the practice of legitimate medicine becoming more difficult year by year, while the entrance into "fads and fakes, paths and pathies" becomes year by year more easy, with the almost certain assurance that in a few years such "fad or pathy" will be legalized.

Can legislators be made to see that the right to care for the sick, the diseased, the injured, is not an inherent right; that it can be regulated by law, but by the same token, any regulation which applies to one person asking permission to care for the sick, to practice the healing art, should apply to all; in fact, that the sensible, correct solution of the question brings us to a "One Board Bill" for which the medical profession stands practically as a unit? C. R. P.

GET ACQUAINTED EARLY

The opportune time to mould public opinion is before you have to counteract the influence of divergent views. Every session of our State Legislature has presented for its consideration a number of bills detrimental to the health and safety of the community, against which the medical profession as a whole is enlisted to protect the people of the commonwealth. The newly elected members of both the house and senate will take their seats in January as will our Governor and other state officials. Now is the time to make their acquaintance or renew friendships, as the case may be, so that we can be of still greater service in that herculean task of protecting the lives of the people of our commonwealth from the misguided and unscrupulous.

G. H. C.

PASTEUR CENTENARY IN PHILADELPHIA

The immortal discoveries of Pasteur have made him the world's greatest benefactor. Hence the universal interest in the celebration of the centenary of his birth, which takes place on the 27th of December. His studies of crystallography led him to the discovery that fermentation is due to a living microörganism which decomposes the soil upon which it grows and produces a third substance—a poison or toxin. He found that putrefaction was always due to saprogenic germs which decomposed the albuminoids. But greater than all, he discovered that neither putrefaction nor fermentation could take place when the microörganisms were made inaccessible. He, therefore, completely disproved the theory of spontaneous generation. Reasoning that infectious diseases were but fermentative and putrefactive processes in animal bodies, he solved at once the question of their cause and prevention. Anthrax, chicken cholera, hog cholera, silkworm disease, hydrophobia, were soon elucidated. He discovered vaccines as being but modified forms of the original germ growth. He was the pathfinder that led him to a golden mine of knowledge wherein his followers need but stoop in order to find nuggets of medical discovery. He has regenerated medicine and surgery, and what we now do is but developing and reaping the fruits of that great tree of knowledge of which Pasteur is the trunk and roots. The history of medicine at some future time will be divided into two great epochs—before and after Pasteur.

W. D. R.

ANURIA

Postoperative and calculous anuria have been too little discussed of late in the meetings of the State Society, and our next meeting at Pittsburgh will afford an excellent opportunity. A symposium on this subject, therefore, is now in the making.

Even men of wide professional experience and the surgeons encounter so few cases of anuria during their lifetime—unless they are genitourinary specialists—that the great majority of medical men and surgeons are left floundering around in a sea of bewilderment at a time when drastic measures must be taken and a definite line of action determined upon if we are to reduce the high mortality rate.

Statistics show that in such cases, treated expectantly, the mortality is 72%; and following operation the mortality is 46%. Are not these figures appalling? Physiologists and pathologists, giving intensive study to the subject, should soon be able to throw some light on a condition too little understood at the present time.

Picture to yourself a patient who, following a major or minor operation, within twenty-four hours exhibits complete anuria; or a patient in fair health and attending to his or her daily duties, who is affected in the same way. Naturally the method adopted has been to treat such cases expectantly until such measures prove useless and fail to give results. In the former case the surgeon dreads submitting the patient to a second operation—stripping the capsule of both kidneys—and often waits beyond a safe time for the operation, with fatal results. In the latter case, after a reasonable time, the G-U specialist is consulted and finds the patient and relatives unwilling to submit to an operation. Valuable time is lost. The patient, in a number of cases, cannot see the necessity for remaining in bed, feels fairly comfortable and wants to be up. Sooner or later nausea, vomiting and hiccoughs set in, and the patient goes into a state of uremia from which few awaken.

It is the latent period, when there are so few subjective symptoms, that it is allowed to slip by, that is most dangerous. Experience has proved that if an operation can be performed within the first seventy-two hours the outlook is brighter, and each succeeding twenty-four hours lessens the patient's chances of recovery. The average duration of complete anuria, from the time of onset until the patient dies, is ten to fourteen days.

Has not the mortality of diphtheria been reduced from 75% to 11% with the antitoxin treatment? And yet we physicians, surgeons and specialists have been unable, up to the present time, to reduce the mortality rate in anuria below 46%! Is it not time that this subject should receive intensive study? As a profession we should strive to learn more about the etiology and best method of treatment, and to reduce this fearful mortality rate. T. G. S.

THE LEGISLATURE OF 1923

The coming session of the General Assembly of the State of Pennsylvania bids fair to be an epoch-making body.

There will be a number of measures introduced, including revenue producers, banking measures, bills for the coalescing of bureaus, and measures pertaining to the health and welfare of the people of the commonwealth; the last of which will be of vital concern to the medical profession of the state.

A note of warning should be sounded so that every member of the medical profession will hear and be impelled to be up and doing, watching every measure introduced which will, in any way, bear on the health of the people.

The Journal of the Medical Society of the State of Pennsylvania has endeavored to impress upon the medical profession of Pennsylvania, the importance of keeping in touch with the members of the Legislature and apprising them of the stand the profession has taken on medical legislation.

There will be a bill introduced in the 1923 session of the Legislature, establishing the standard of preliminary education as well as the professional qualifications of any one essaying to practice any branch of the healing art. This measure will have the endorsement of the Department of Education and should have the unqualified support of every member of the medical, dental, pharmaceutical and nursing professions, as well as all educated practitioners of the various cults. This bill is solely for the protection of the public against illegal and illy-qualified practitioners.

There are rumors to the effect that the compulsory health insurance question will be revived and an effort made to have a commission appointed to consider this question again. This must positively be opposed on the ground that if compulsory health insurance becomes operative in Pennsylvania, the people of the commonwealth, will then receive quantity rather than quality treatment and the high standard of the practice of medicine will immediately be lowered. Subsidized state medicine should be opposed for the same reasons.

The profession must uphold the Health Department of the state in all its efforts to control the food and water supplies and support its work in the tuberculosis and venereal crusades and must stand behind it in the endeavor to control contagious diseases, and support it in its administration of the narcotic laws.

Antivivisection and antivaccination legislation must be strongly and consistently opposed. If proper animal experimentation in this state be curtailed and the research work interfered with, Pennsylvania will lose its standing as a medical center.

The Medical Legislative Conference has been busy during the past year planning and preparing for the work at Harrisburg during the coming session of the Legislature. It has kept the profession informed on matters of importance in medical legislation and it now looks for the individual help of each member of the profession and would especially emphasize the importance of every doctor frequently interviewing the members of the Legislature representing his district and keeping them informed as to the stand the profession assumes on pending legislation.

The medical profession of Pennsylvania is organized and functioning better than that of any other state and it is very gratifying to learn that other states are adopting its methods.

The Trustees of the American Medical Association have endorsed the plan of action and methods used by the Medical Legislative Conference of Pennsylvania. G. E. K.

MEDICAL EXTENSION SERVICE

The medical extension service under the plan proposed by Dr. Meeker will be, if carried into effect, a movement toward better standards in the practice of medicine in Pennsylvania. The scheme will cause those who avail themselves of its advantages to rise in popular favor, and what is infinitely more important, enable them to render an improved professional service to their respective communities. It cannot fail to arrest the attention and arouse the enthusiasm of the profession of the state; it will produce a spirit of confidence and practical skill among general practitioners, hitherto unknown. Other methods than the Meeker plan, for achieving a like or even greater advancement of the medical profession of the state, may be developed in the future, but these are merely means to an end, the main thing being to rise to a determination now that the cause shall not fail, since it affects vitally a large element of the medical profession and the general public.

It has been impossible for the general practitioner to keep on the road to higher modern medicine under the traditional standards and conditions of a singe decade ago. Indeed, inevitable retrogression has been the lot of all of the older physicians who have not, at a pecuniary loss, taken polyclinic courses from time to time in our graduate schools. The principal cause assigned for this unfortunate state of affairs is that practitioners have been out of touch with modern instruments of precision, and well-equipped clinical laboratories, as well as the new advances resulting from laboratory experiment. The effect of the medical extension service about to be instituted will be to overcome this handicap, in a measure at least.

The scheme should additionally provide for coöperative effort on the part of county medical societies. By extending the advantages of such service to the latter, greater interest in their work would, it is believed, be aroused. Another fact which medical extension service should present has reference to standard textbooks and current medical literature. Once well under way, the scheme would owe no small part of its strength to the fact that it stood for and urged the systematic reading of up-to-date medical works and current periodicals. Doubtless, lack of enthusiasm in this respect has been one of the causes of failure of physicians to acquaint themselves with the new advances in medicine. Whilst we learn most from the study of disease, we also learn from books and journals, if systematically consulted. The writer would suggest that the plan of our medical extension service shall include efforts to establish reference libraries where they do not already exist, in institutions in which the group plan of training physicians is carried on. It is only by helping the general practitioner to help himself in different lines that he can develop his possibilities and gauge his responsibilities.

The details of the scheme as concerns its main object, which is to give the practitioner fresh light to be utilized by him in the study and treatment of disease, need not be considered here. These have been carefully worked out by Dean Meeker. It is the purpose of this article to put forward a plea for accessory agencies, which if linked up with medical extension service proper, would give the latter its full effect. Two of these auxiliary agencies have already been mentioned, to wit: active participation in the work of the county medical society and the right use of medical books and current periodicals. These might very properly be placed among essentials to success, but considered alone they are not adequate to prevent a gradual falling behind the times on the part of the general practitioner. It is perfectly manifest to the writer that to link up the movement started by the Pennsylvania Tuberculosis Society to conduct tuberculosis demonstration clinics before the county medical societies, with the proposed medical extension service, would be a proper step, and if those interested were to become sympathetic to the idea, that it could be readily reduced to action. Such a relationship would give strength and support to the postgraduate training of the practitioners of Pennsylvania.

Finally, it is no longer considered possible for the practitioner to attain to complete success by concentrating all of his effort upon purely professional lines; he must be in addition a socially useful citizen. To this end nothing contributes more potently than joining certain welfare organizations, e. g., local health centers, tuberculosis societies, village improvement associations and the like. Indeed, by virtue of the training which he has received for his life work, he should assume leadership in these societies.

J. M. A.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

INSTITUTIONAL PHYSICIANS FROM A BUSINESS VIEWPOINT

Since time immemorial there has been an old adage, which sprang from evil design, political intrigue or some other mushroom growth, that a physician was a poor business man. This statement is not proved by facts as presented in the study of hospital administrators. When we recall that billions of dollars through the United States have been expended by various medical hospital administrations, with results gratifying to their supervisory boards and the community at large, the falsity of this statement is at once seen. These men seem perfectly capable of surrounding themselves with department heads well versed in business affairs, as does the head of an industrial plant or a large corporation. Whether this holds true in the personal business affairs of these men, the world will never know, although we do see in reviewing the history of the lives of those men, who having retired after long years of service to private life, meet a fate no different from the average business man, whose depleting finances keep apace with his declining years. To guard against these years, the average hospital administrator plans in his business scheme of life for his well-earned pension, just as the business man plans for the maturity of his twenty or thirty-year endowments.

The writer does not assume that the title of this paper means a long discussion on the ins and outs of a hospital job, its pleasantness or unpleasantness, its opportunities or its lack of opportunities, but accepts the subject rather as a question as to what is the rating of the hospital physician in the matter of business propositions and the business world, assuming the business world to mean a comfortable living, their adaptability to business methods, as well as opportunities presented for gain by investments and reinvestments.

To determine a man's business ability, one must consider his working capital and his opportunity. The hospital physicians collectively deserve credit for the showing they make financially, with the opportunities given them and the remuneration which they receive. Primarily, we must recall that the average hospital physician enters the hospital with his diplomas, his suit case, with a pocketbook that has been drained lean during a period of six years' intensive and expensive training, with an inherent desire to play poker.

The new worker accepts a "greatly" remunerative position of $1,500 a year, with board, lodging and laundry. He has the happy prospect of a possible increase of $100 a year, until he reaches the magnificent sum of $1,900 per annum, provided that he has become acclimated to that pious aspect which shadows so many of our institutions, and he is not fired. He is probably deluded with the idea that as soon as he accumulates a comfortable sum, he will probably take up surgery or pediatrics. This type of man, ordinarily, leaves the institution as well off financially as he came or he becomes a life timer. The aspiration to head a hospital is very much overshadowed by the fact that few such positions are available, and for these there are long waiting lists of men, who have preceded him by years of service.

From such remuneration and well defined custom of annual increases, the world cannot expect to raise up over night from this group of young enthusiastic workers, a Morgan or a Carnegie. On the other hand, the hospital physicians, taken collectively, make a good showing in proportion to the finances available and the opportunities presented. They are able to maintain their good standing in society, they cough up for all public contributions, and seldom do we find them (I mean those who stick to the hospital game) charges on the community or in financial distress.

Furthermore, we must consider that the physician, especially the hospital physician, who is constantly applying his energy, his brain and his time to keep apace with the progress of medicine and to give unto his patients the best medical and humane service, does not have much of an opportunity to follow the exchange, the bond market, the valuation of property, gold and silver explorations, which come before the business man as a part of his daily life. The charge, therefore, that he is a poor business man is all rot. When we pay these physicians wages in proportion to other grades of professional work, to which they are entitled, they are sufficiently well versed in business to take care of it.

The writer has never had an opportunity of making a survey of the financial status or the business ability of a group of hospital physicians, but has had, however, sufficient insight into the competence of his fellow colleagues to appreciate the fact that each has his own bank account, and not infrequently private discussions are held concerning the matter of investment.

Therefore, in this restricted field for business opportunity, investment and reinvestment, we do not find the hospital physician idle. The payment of his college debts is successfully followed by life insurance, health and accident insurance, as well as insurance carrying permanent disability clauses. If he remains single, we find him at the end of a few years with possibly his first thousand or two accumulated. These earnings are as a general rule, placed in safe securities, bearing a normal rate of interest, the securities being government, municipal or corporate bonds. The hospital physician has long since recognized that the get-rich-quick schemes always fail, that the sucker for propositions of gold, silver and copper has long since died. As his earnings accumulate, he continues to select conservative issues, investing in first mortgages, real estate, building and loans and recognized stable bonds.

When we view the situation from this angle and the facts as they present themselves, the hospital physician is by no means a dub in business. The majority of the men are familiar with business transactions and legal technicalities attached to transactions and their background of general training points the way to a legal adviser in such matters as seem beyond their comprehension. Unfortunately, in the hands of a lawyer, they are as helpless as the ordinary citizen of the outside world. The general run of rules and regulations of all hospitals prevent a superintendent or the staff from engaging in business enterprises of a personal nature. This can be well understood, as a man owes his services to his employer. There are no restrictions, however, on the many paying interests in corporate bodies, or on serving in the capacity of trustee or director of an industrial institution, bank, etc., but here they must, however, be content with their little 5% dividend.

The foregoing remarks apply to the physician who enters the hospital with his life dedicated to his scientific work, sacrificing his future prospects of family ties and posterity. For the married man on the hospital staff, who has family dependents, the problem is somewhat different. The world has never seen fit to pay a married man a higher salary for a definite job, on the basis that he was a married man. The same applies to the married man in the hospital. In many instances, however, house and light are provided for the use of himself and family, while his remuneration ranges from about $1,500 to $1,900, depending upon his length of service. If he is promoted to the position of Clinical Director or Assistant Medical Superintendent, he has an approximate salary of $250 per month with house and light, and possibly maintenance. One can, therefore, appreciate, with two or three dependents to support, the financial difficulties of this group of physicians. Here again, the business ability of hospital physicians, taken collectively, is manifested, when we appreciate the fact that their wives and their families are maintained at a social level in which they are highly respected by the society of the community, that their children are educated and begin the voyage of life well equipped. Although the question of happiness and the success of life does not enter into this discussion, taking the matter collectively, the married man on the hospital staff with a happy family, and comfortable quarters, "wins" in the long run of life.

And so, we find, contrary to the belief that prevails in the minds of some extramural colleagues, that the hospital physician, after all, is not a parasite; neither is he slovenly and sluggish in appreciating the progress of medicine but is also fully alive and awake to business methods and avails himself of every opportunity to invest and reinvest in interests that will insure his mental and physical comfort, as well as that of his posterity.

The hospital physician, in the matter of earthly goods does not vary from the thousands of other physicians. He was not lured into the medical field by glittering gold or shining silver, but dedicates his life to the leadership of science in the betterment of humanity, with a full appreciation that he must provide for his family, his posterity and himself in accordance with the recognized standards of society. In achieving this earthly gain, he acquires a happy relationship with "St. Peter of the Golden Gate" and lets the money-mad world go rushing by.

J. Allen Jackson, M.D.,
Superintendent State Hospital
for the Insane, Danville.

Dr. O. Pine queries: How can my ultra-altruistic intelligence protest against the commercialism of the brother forsaking lean rural pasturage for more nutritious urban fodder?

Dr. O. Pine queries: What should be done to the genius who has discovered that his new method of treating lobar pneumonia shortens the duration of that malady by effecting the crisis as early as the seventh day?

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.,
Pittsburgh, Pa.

THE HEALTH OF THE PEOPLE IS THE WEALTH OF THE STATE

We believe that the above truism is rapidly being impressed upon the minds of the people of Pennsylvania, and that one of the chief duties of the organized medical profession is constantly to reiterate the lessons in preventive medicine which teach that the health of the people is the wealth of the state. The most interesting and enjoyable thing in life is health.

All health authorities agree that improvement of public and personal hygiene requires constant educational campaigning. For many years men and women trained in medicine have been the chief source of conveyance to the public of the fundamentals of hygiene, and to the extent that the general public has in the past been relieved of responsibility for applying knowledge in the prevention of sickness, it has to that extent been pauperized. Since in more recent years, however, various organizations enrolling lay men and women have come into this particular educational field, the public has slowly and gradually been impressed with its responsibility for the good health of the commonwealth. All organizations seeking to minimize sickness and prolong life depend upon and welcome the advice of physicians, and Pennsylvania has many such organizations which may often find themselves at a loss for authoritative sources of information in building up and advancing health conservation.

Upon the newly created Public Relations Committee of the Medical Society of the State of Pennsylvania falls the great task of providing for more nearly perfect coöperation between our Society and the various public health organizations of Pennsylvania. To bring this about the Public Relations Committee must stimulate the activities of our county medical societies along public health lines, and they must encourage coöperation between the county medical societies and the various health agencies within the respective counties. They must also prepare proper publicity matter and secure proper publicity along public health lines. The opportunities for service of this new committee are boundless, and when their functions are fully enacted and appreciated, a long step in advancing the interests of public health in Pennsylvania will have been well taken.

All the members of the Medical Society of the State of California are members of the California League for the Conservation of Public Health, and their united judgment sponsors the better health service of all the organizations comprising the League. The Colorado State Medical Society sponsors the Public Health League of its state. The Iowa State Medical Society sponsors the Field Activities Committee uniting the Iowa State Medical Society, the Iowa State Board of Health, the State University Medical College faculty, the State Conference of Social Work and the Iowa Tuberculosis Association. This Field Activities Committee has, through the State Medical Society and its component county medical societies, effected coöperation between the medical profession and the above mentioned organizations.

The House of Delegates of the American Medical Association, recognizing that much of the propaganda for better health as spread throughout the nation has lost the stamp of approval which is based on centuries of medical practice, has authorized the issuance of a health magazine to laymen. As a result, the Board of Trustees of the American Medical Association has arranged for the issuance of such a journal from the headquarters at Chicago. The first number will appear in April, 1923. The magazine will be known as "Hygiene," and will be issued monthly. It will contain sixty-four pages of reading matter and will be of literary quality and physical make-up equal to that of any monthly magazine published in this country. Its contributors will include the best writers of popular fiction and science, and through its columns the practice of scientific medicine will be placed in its true light before the American public. The ultimate success of "Hygiene" will depend largely on the degree of initial enthusiasm with which it is received by the members of the American Medical Association and by them recommended to the public.

SECRETARY WEST

Those of our members who had the privilege of meeting or hearing Field Secretary Olin West, of the American Medical Association, at our Scranton Session, will be pleased to learn that Dr. West has been elected Secretary of the

American Medical Association by the Board of Trustees. Dr. West by reason of his experience as Secretary of the Tennessee State Medical Association and on account of his pleasing personality combines nicely the qualities essential to success in his larger field of endeavor.

The American Medical Association is more and more each succeeding year being recognized by the medical profession and the intelligent public of North America as one of the leading organizations in the development of all that is best in American life. One of the greatest features in the achievement of this high standing is the high quality of men comprising the personnel of the various home office departments of the Association.

We congratulate the Board of Trustees of the American Medical Association upon the selection of Dr. West for the high office of Secretary of the Association and bespeak from Pennsylvania's membership that degree of coöperation which alone will make possible the ultimate success of Dr. West in his present position.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since September 18. Figures in first column indicate County Society numbers; second column, State Society numbers.

Sept. 18	Philadelphia	1971–1998	7208–7235	$140.00
19	Fayette	116	7236	5.00
22	Delaware	91–92	7237–7238	5.00
23	Erie	133	7239	5.00
25	Northampton	136	7240	2.50
	Somerset	46–47	7241–7242	7.50
	Lebanon	38	7243	5.00
26	Lackawanna	195–197	7244–7246	15.00
27	Fayette	117	7247	2.50
	Clinton	26	7248	2.50
	Allegheny	1196–1202	7249–7255	17.50
Oct. 2	Erie	134–137	7256–7259	20.00
10	Clarion	30	7260	2.50
	Montgomery	157	7261	5.00
12	Washington	124	7262	2.50
14	Cambria	130	7263	5.00
	Beaver	64	7264	2.50
	Erie	139	7265	5.00
16	York	125	7266	2.50
	Delaware	93	7267	2.50
26	Clarion	32	7268	2.50

The following payment of per capita assessment has been received since October 26th. Figures in first column indicate County Society numbers; second column, State Society numbers.

For 1922

Nov. 2	Luzerne	227	7269	$5.00
3	Luzerne	225	7270	5.00
4	Northampton	137	7271	2.50
6	Luzerne	228	7272	5.00
8	Philadelphia	1999–2017	7273–7291	95.00
11	Tioga	31	7292	2.50
	Bucks	79	7293	2.50
	Lancaster	130–131	7294–7295	5.00
15	Westmoreland	152	7296	5.00
	Dauphin	154	7297	2.50
20	Northampton	138	7298	2.50
	Luzerne	229	7299	5.00

For 1923

Nov. 7	Beaver	1	1	5.00
	Venango	1–2	2–3	10.00
	Erie	1	4	5.00
20	Armstrong	1	5	5.00
22	Montour	1–2	6–7	10.00

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

Adams: *Death*—Rice H. Lindaman (Hahneman Med. Coll., '04), of Littlestown, recently, aged 41.

Allegheny: *Removal*—Wm. T. Hall, from Dixmont to 835 Maywood Ave., Hammond, Ind.

Armstrong: *New Member*—Edward McNutt, Leechburg; *Removal*—Charles A. White, from Templeton to Dayton.

Beaver: *New Member*—Leslie L. Hunter, Midland.

Blair: *Death*—Henry H. Brotherlin (Jeff. Med. Coll., '83), of Hollidaysburg, Aug. 20, aged 63.

Bucks: *New Member*—Thomas J. Clemens, Southampton.

Clearfield: *Removal*—Samuel D. Bailey, from Clearfield to Phillipsburg (Center Co.).

Clarion: *New Member*—H. A. Wick, New Bethlehem.

Dauphin: *New Member*—Horace B. Dean, 801 N. Third St., Harrisburg.

Delaware: *Transfer*—George B. Mullison, Roulette (Potter Co.), formerly of Chester, to Potter County Society.

Erie: *New Member*—J. Elmer O'Brien, 302 E. Tenth St., Erie. *Removal*—James E. Schurgot, from Lorain, Ohio, to California, Pa. (Wash. Co.).

Lancaster: *New Members*—Jeremiah J. Sullivan, 143 N. Duke St.; S. Gilmore Pontius, 234 N. Duke St., Lancaster. *Deaths*—Abraham G. Bowman (Univ. of Penna., '64), of Lancaster, Sept. 23, aged 64; Robert N. Bolenius (Univ. of Md. Coll. Phys. & Surg., '73), of Lancaster, Nov. 13, aged 75.

Luzerne: *Reinstated Members*—John C. Fleming, Dallas; Samuel A. Ruffner, 169 So. Maple Ave., Kingston; George H. McConnon, 246 E. Northampton St., Wilkes-Barre; Albert M. Thomas, Glen Lyon. *Removal*—Samuel French, from Wilkes-Barre to 35 E. Main St., Plymouth. *Death*—Daniel F. Frederick, of Ashley, Oct. 28.

Lycoming: *Transfer*—James E. Hunt, of Norristown, to Montgomery County Society.

Montour: *New Member*—Rowland A. Kirch, Geisinger Hospital, Danville. *Transfer*—Donald B. McHenry, Danville (formerly of Orangeville), from Columbia County Society.

Northampton: *New Members*—Stephen S. P. Wetmore, 358 Taylor Ave., Easton; Milton E. Weaver, Wind Gap. *Death* — Herbert Threlkeld Edwards (Univ. of Penna., '92), of Bethlehem, Sept. 30, aged 52.

Philadelphia: *Removal*—Frederick W. Ninde, from Philadelphia to West Chester (Chester Co.); E. Bryan Kyle, from Moorstown, N. J., to Ardmore, Pa. *Deaths*—T. Vaughn Crandall (Col. Univ. Coll. Phys. & Surg., '65), of Philadelphia, Sept. 22, aged 83; Eugene Lamparter (Univ. of Penn., '82), of Philadelphia, July 31, aged 74; Charles M. Seltzer (Univ. of Penna., '78), of Philadelphia, August 21, aged 65; Francis J. Lammer (Med. Chirurg. Coll., Phila., '98), of Philadelphia, Nov. 14, aged 58.

Schuylkill: *Deaths*—Samuel E. Wertman (Jeff. Med. Coll., '89), of Mahanoy City, Sept. 29, aged 55; Louis R. Kennedy (Univ. of Penna., '95), of Pottsville, recently, aged 50.

Tioga: *New Member*—Ernest L. Ward, Osceola.

Venango: *New Members*—William E. Fawcett, Indiana State Sanatarium, Rockville, Ind.; Charles H.

Brown, Franklin. *Death*—George W. Dille, of Cooperstown, Oct. 25.

Washington: *Death*—Horace M. Lacock (Jeff. Med. Coll., '02), of West Finley, Oct. 23, aged 47. *Removal*—John W. Ildza, from Canonsburg to 1431 Woods Run Ave., Pittsburgh.

Westmoreland: *Reinstated Member*—David R. Shepler, West Newton. *Removal*—Isaac J. Israel, from Monessen to Renton (Alleg. Co.). *Death*—James H. Lawhead (Jeff. Med. Coll., '86), of West Newton, Aug. 13, aged 60.

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary

212 N. Third St., Harrisburg

A CALIFORNIA PLAN

On the cover page of the *California State Journal of Medicine* for November, 1922, appears the following resolution:

"Whereas, It always has been and is the primary purpose of physicians to give trained, scientific, sympathetic service to all of their fellow citizens who need medical advice and to furnish this service to all alike, regardless of the social or financial standing of the patient, and

"Whereas, It never has been and is not now necessary to interpose any agency not under the direct supervision and control of competent members of the medical profession, members are reminded of the dangers of coöperation in agencies where such supervision and control does not exist, and

"Whereas, In order to reëmphasize these policies and practices to all citizens of California, and to counteract the influences going about the state to the effect that consideration by physicians for those needing medical advice can be obtained only by applying to some nonmedical organization, and in order that the public may be fully informed and free to call directly upon the physician of its choice with the assurance of sympathetic and confidential consideration; therefore, be it

"*Resolved*, By the Medical Society of the State of California and representatives of all county and other constituent organizations, in convention assembled, that the office of each of its 4,000 members throughout the state is a "Health Center" of the kind that means the best medicine and public health advice that physicians can give; this upon the basis that those who can pay in full should do so, those who can pay part should do so, and those who are unable to pay should have the service without cost.

"*Resolved*, That in order to secure special financial consideration, the patient is requested to execute and sign a paper showing his socio-financial status and setting forth briefly the reasons why he must ask for special financial consideration, this being the policy now being followed by clinics and welfare organizations of all sorts."

In the editorial columns of the same number we find a more extensive discussion of the plan as to how California will carry out the recommendations of that resolution. This editorial in part is as follows:

"Contained in the minutes of the House of Delegates, as part of that resolution, is the following note:

"The State Society will supply each of its members with appropriate blank forms for this purpose, and will furnish one to any citizen who desires to use it. One of these forms presented to any member of the State Society in any part of the state will insure the courtesies and special consideration that his condition warrants and, in addition, he will receive the same sympathetic, confidential, constructive help that is given to the person who is able to pay fully for all that he requires. In carrying out this program, physicians reserve the right, when they think wise, to check up on the accuracy of the applicant's statements in an unobtrusive and sympathetic manner, in exactly the same way as those reports are now being checked up by clinics and other welfare organizations. Members also reserve the right to refer applicants for special consideration to other physicians under the same conditions and for the same reasons that they would refer patients paying regular fees. Any sick person in any part of the State of California who fails, for any reason, to secure adequate medical attention is requested to communicate with the secretary of the State Medical Society, 1016 Balboa Building, San Francisco."

We call this matter to the attention of the profession of Pennsylvania because it seems that the public is asking much more at the present time of the medical profession than has been required in the years gone by. It would be much better for the profession to anticipate the needs of the public rather than to have them legislated into some form which is not always the most agreeable way to carry out even the best of health regulations.

It may not be necessary for us to discuss the subject of health centers in any form, because the matter has not been seriously considered in Pennsylvania so far as we are aware, but it is a topic with which we should be thoroughly familiar, and should this matter be discussed at any future time the physicians of Pennsylvania will then be in possession of sufficient information to be able to act intelligently.

THE EASIEST THING

It's easy to flinch and it's easy to whine
  When foes that are stronger assail;
When your pathway is barred and the going is hard,
  That's the time it is easy to fail;
But while you've a chance don't give way to despair
  To yourself and your purpose stay true;
Make a battle of it, do not lie down and quit—
  That's the easiest thing you can do.

By Edgar A. Guest, *Journal of Education.*

No, Newgood, although enveloped in Egyptian darkness, Chiropractic did not originate in Cairo!

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Siebert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—Luther B. Kline, M.D., Catawissa.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—Maude C. Exley, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—James M. Torrence, M.D., Indiana.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederick R. Bausch, M.D., Allentown.
Luzerne—C. L. Shafer, M.D., Kingston.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Mary A. Hipple, Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

December, 1922

COUNTY SOCIETY REPORTS

BUCKS—NOVEMBER

The Bucks County Medical Society held its seventy-fourth annual meeting on the 8th of November, in Doylestown. The old society still retains the habit of holding its annual session while the frost is on the pumpkin and the spirit of hunting makes "old men" feel younger; yes, it meets while the roads are still good, in deference to the custom when earnest country doctors drove twenty miles and more with horse and buggy to get to a meeting and the same distance back—an all-day's task. This county society anticipates the fiscal year of the parent organization by two months, and got there with both feet, too, when it rolled up an attendance of sixty per cent of the country membership that day, and then some more. Likewise, over half of the membership paid their 1923 dues two months in advance. President Elmer E. Pownall, M.D., officiated, and Secretary Myers kept the records.

The following officers were elected: President, John A. Weierbach, M.D., Quakertown; vice-presidents, Roscoe C. Magill, M.D., Newhope; George T. Fox, M.D., Bristol; Secretary-Treasurer, Anthony F. Myers, M.D., Blooming Glen.

Dr. Elmer E. Pownall in his retiring address recalled many virtues and benefits of a physician's career and the opportunities of doing good. He likewise referred to some of the besetting sins of the laity and some of the tricks resorted to, to impose upon the honest doctors.

The feature of the annual meeting was the address by Judge William C. Ryan, of Doylestown, on "The Law and the Doctor." The address was full of valuable information for the general practitioner. Its significance merits fuller publication.

Judge Ryan expressed his pleasure at receiving the invitation to speak to the doctors, but disclaimed any intention of making a formal address. He reviewed briefly the legislation in Pennsylvania which had culminated in the Act of 1911, which created the Bureau of Medical Education and Licensure of the Department of Public Instruction. Such legislation had been sustained by the Supreme Court of the United States and the Supreme Court of Pennsylvania as constitutional. It was, he said, a settled policy of the law in this country and particularly in Pennsylvania, that the practice of any profession having to do with the health and welfare of the people must be regulated to the extent of preventing those who are not sufficiently trained and equipped from practicing.

He also discussed the doctor as a witness, both as an expert and a nonexpert, and related some interesting stories at the expense of experts and counsel. He said that the character of present-day litigation in the courts, both civil and criminal, is bringing the doctor into the witness box more and more frequently. Especially was this true as a result of the great increase of negligence cases upon the dockets of the courts. He told the doctors something of the law relating to witnesses to wills, in which capacity doctors sometimes came into court. The witness to a will, by becoming such, affirms the fact that the testator was, at the time of the will's execution, of sound mind as well as that the testator signed the will; and if later he testifies that the person who made the will was not at the time of sound mind, he, in effect, impeaches his own act.

Judge Ryan also spoke of the extent of the doctor's liability for damages in malpractice suits, and said that in a recent case the Supreme Court of Pennsylvania had reasserted the rule that the doctor is not held to the duty of rendering a high degree of care but is required only to use the ordinary care exercised under like circumstances which, of course, is a higher degree of care when compared with that called for in less important matters. At the close of his remarks Judge Ryan was given a rising vote of thanks.

Harry W. Albertson, M.D., Scranton, trustee and councilor of the State Medical Society, also addressed the body. He referred more particularly to the efforts of the State Society in its endeavor to secure better legislation for the several professions—the doctor, the druggist and the dentist. He defined some of the needed legislation and the benefits to be derived by the country doctors being closely allied with the parent organization. He also detailed the influence physicians may exert upon the members of the legislature by holding closer social relations with those men. The average legislator wants to be shown what is desired by his constituents. Anthony F. Myers, Reporter.

MERCER—OCTOBER-NOVEMBER

On Thursday evening, October 26th, at 6:30 o'clock, members and guests of the Mercer County Medical Society numbering 94 gathered at the Sharon Country Club, under the presidency of Dr. Joseph H. Reed. The Country Club was decorated in Halloween colors and the tables with yellow chrysanthemums. Music was furnished by Cave's Orchestra, of Sharon. At seven o'clock those present filed into the banquet hall, where a sumptuous repast was served. This was followed by an excellent program.

We were fortunate and honored in having Dr. Carl A. Hamann, Dean of the Medical School of Western Reserve University, Cleveland, Ohio, with us. Dr. Hamann gave an interesting and most instructive talk on "Surgery of the Rectum."

Dr. Walter F. Donaldson, Secretary of the Medical Society of the State of Pennsylvania, told us about the postgraduate extension course in medicine offered by the Postgraduate School of Medicine of the University of Pennsylvania. We are always glad to have Dr. Donaldson with us.

Dr. Thos. E. Jones, of the Cleveland Clinic, Cleveland, Ohio, gave a talk on "Carcinoma of the Cervix; Its Treatment by Surgery and Radium," using lantern slides in connection with the talk.

Among the guests were Dr. W. W. Richardson, Erie; Miss Margaret Cumming, Superintendent of Buhl Hospital, Sharon; Dr. W. A. Womer, Secretary of the Lawrence County Medical Society, and 23 of his members from Newcastle; Dr. A. W. Thomas, Secretary of the Mahoning County Medical Society, Youngstown, Ohio, and several of his members from Youngstown; Dr. Earl King and Dr. Dick Cunningham, the Mayor of Girard, Ohio; Dr. Gross, of Hubbard, Ohio, and Dr. C. W. Banks, Orangeville, Ohio.

The regular meeting of the Mercer County Medical Society was held at Grove City in the Auditorium of the Carnegie Library on Thursday, November 17th, at 1:30 p.m. After a short business meeting an open meeting followed, to which the public was invited. Dr. B. A. Montgomery, Grove City, gave a talk on cancer from the medical viewpoint. Dr. John F. Spearman, Sharon, talked on cancer from a surgical viewpoint, stating that early and radical operation had done much for the cure of cancer.

The president, Dr. Joseph H. Reed, of Sharon, read an interesting paper telling of the advances in medicine in recent years. He said that he hoped we would have cancer as completely under control in the future as we now have diphtheria with the use of antitoxin.

Drs. O'Brien, R. M. Hope, and Potter also gave able talks. We had several meetings in our county during National Cancer Week. One application for membership was read and referred to the censors.

Adjourned to meet in January.

Edith MacBride, Secretary-Reporter.

MONTOUR—JUNE

The regular monthly meeting of the Montour County Medical Society was held at the Geisinger Memorial Hospital, Danville, on Friday, June 16th, and was called to order by the president, Dr. H. V. Pike, at 8:15 p.m.

The following members were present: Drs. Adams, Bitler, Free, Keilty, Patten, Pike, Sandel and Shellenberger. Visitors were Dr. A. R. Kirch, A. B. Vastine, D.D.S., Dr. F. R. Clark, Berwick; Mr. Robert Froberger and Miss Mary Scott, nurse.

Dr. Reid Nebinger, for the Committee on Dental Clinics for School Children, reported that the matter was being worked out and it was expected that everything would be in readiness by the time of the opening of the coming school term.

Dr. J. Allen Jackson was elected as representative of the society to the House of Delegates of the State Society for the present year, with Drs. E. H. Adams and C. E. Ervin as alternates. Dr. Reid Nebinger, the present Censor, was nominated as District Censor for the ensuing year.

The by-laws provide that the July meeting shall be an outing, and it was decided to hold the same at Ashhurst, Senator Sones' estate, between Muncy and Halls. Dr. R. A. Keilty was constituted a committee to make the necessary arrangements for the same.

Taking up the scientific program, Dr. R. S. Patten read a well-prepared and practical paper on "The Management of the Obstetric Case in the Home." He began by referring to a paper prepared and read by him before the society, about two years ago, "The Prenatal Care of the Expectant Mother," and regarded the present paper as the second of a series. He said that after an experience of 25 years, he was satisfied, with proper preparation, a parturient woman could be delivered as safely in the home as in a well-appointed hospital. He outlined the preparation which should be made and the manner in which the case should be conducted. He noted that 20 years ago, in the majority of cases, little preparation was made for the conduct of the case. Too often the case was not seen by the physician until the onset of labor; but in recent years many have come to realize the advantage of proper preparation and are willing to coöperate. He gave directions for sterilizing sheets, clothing, dressings, towels, etc.; advised the use of pads of newspapers, which can be baked; suggested that two sterile basins be provided, one for cleansing purposes and the other for lysol solution. He urged that the obstetrician be a "good waiter." Examinations can be per vagina or rectum; the condition of the cervix and the position is to be carefully noted. For a rigid cervix he advised the use of chloral hydrate, which gives rest and conserves the strength of the patient.

In the second stage, in tedious cases, he uses an anesthetic, either partial or complete. In the matter of giving help, he held it was not easy to decide. It is his practice where good headway is being made to wait and give nature a chance, but in tedious cases to give help. He uses the short forceps in many cases and thus assists in the completion of labor; he removes them just before the head passes the perineum. Regarding repairs, he considers immediate repairs to be the best, and any laceration of one-half inch or more should be repaired. He uses no binder during the first ten hours; after that he has it applied.

In the after care, if conditions are favorable, he has the head raised a little higher each day. He is not superstitious about the ninth day; it counts for no more than any other day. He advised that careful attention be given to the nipples; cleaning them after each nursing, using glycerine and alcohol. It is his practice to make a careful examination a month or six weeks after labor and to correct anything abnormal.

Dr. Clark, in opening the discussion, commended the practical character of the paper. He does not remove the instruments until the delivery of the head is completed; he feels that he has better control with them on. He urged that the patient's hands and forearms be kept clean, since infection can often be conveyed if this is overlooked. He suggested that a leaflet be provided, giving directions for the guidance of the patient.

Dr. Adams pointed out the natural differences in the conduct of an obstetric case in the home and in the hospital, and felt the advantage was with the hospital.

Dr. Bitler asked, "Why wait with the binder?" and said it was his practice to apply it soon after the completion of the third stage of labor. He could see no reason why it should not be done.

Dr. Pike favored the conduct of such cases in a hospital, saying that it was much easier to have full control. The friends, especially the mother of the patient, often prove themselves to be a hindrance. He further said that care is needed in the use of forceps in order to avoid head injuries. Five per cent of cases of mental defects are due to accidents at birth. It is, therefore, necessary to use judgment in the use of forceps. He also noted that postpartum infections often give rise to psychoses.

Dr. A. R. Kirch, an interne at the Geisinger Hospital, presented a splendid paper on "Constipation." He stated that here we have many cases, and it is well to inquire into their history. Usually they will be found to be due to intestinal stasis. Some patients do not have bowel movements for several days. After three days we are apt to have symptoms of intestinal toxemia, although no real toxemia exists.

All cases should be carefully examined to see that there is no mechanical obstruction. The x-ray will show a lot and can show obstructions. Some cases of fecal obstruction are of a spasmodic type. Here we are apt to have large stools. Again, the stools may be long and thin, or flat; the latter suggests some form of partial obstruction.

We must treat some cases for the constipation alone. Here give a light diet, not too concentrated, use some form of roughage in the diet, and have the patient use a liberal enema each morning.

As causes of constipation, we have faulty habits, too frequent use of laxatives, too concentrated a diet, taking too little water and leading sedentary lives.

The treatment consists of trying to improve the tone of the muscular coats of the bowels, and here strychnia is of use. Have the patient take more exercise, use more roughage in the diet (oatmeal is helpful), take one or two glasses of hot or cold water every morning, and seek a movement of the bowels at the same time each day.

Dr. Keilty, in opening the discussion, made use of the blackboard and gave quite a lucid demonstration of the various phases of constipation. He said intestinal stasis may be a functional disease; or rather it should be called an altered function. Constipation may be due to various conditions, e. g., atony or atrophy of the muscular coats, in the latter instance usually of the sigmoid flexure. As much as fifteen pounds of fecal matter has been found in autopsy, mostly in the descending colon and sigmoid. In high obstructions we have acute symptoms, as pain, vomiting, etc. The contents of the lower intestine may be removed in one large movement. Here the use of plenty of water will be found helpful. Constipation may be due to adhesions. Here the five points of adhesion tabulated by Lane were dwelt upon. Again, it may be due to prolapse of the colon. It was noted that the colon is sometimes found in the pelvis.

Dr. Adams characterized constipation as a great evil; yet, on account of its prevalence, it is of interest to all of us. He said we no longer give huge doses of cathartics as formerly; we no longer give castor oil before operations, especially in appendicitis; and we should avoid cathartics after operations.

Dr. Pike said that he had seen many operations for mental defects, but never saw a case of psychosis improved by operation on the bowel, especially for intestinal stasis. He felt that we are still dealing with something we do not fully understand. It should be remembered that most mental cases are due to an unstable nervous system; the brain cells are defective and easily destroyed, and once destroyed are seldom replaced.

Dr. Kirch, in closing, said he was glad for the interest shown in the subject of his paper and for Dr. Keilty's able discussion. He hoped all had been benefited thereby.

No further business appearing, the society adjourned.

J. H. Sandel, Reporter.

MONTOUR—AUGUST

A midsummer meeting of the Montour County Medical Society was held on Friday, August 25, 1922. There were morning and afternoon sessions. The morning session was held at the Geisinger Memorial Hospital and extended from 9 a. m. to 12:30 p. m. This session consisted of a series of clinics and pathological demonstrations.

There were surgical clinics conducted by Drs. H. L. Foss and E. H. Adams, who operated and exemplified a number of interesting cases. There were cases of herniotomy, appendectomy, hysterectomy, thyroidectomy, the removal of Lane's plates, a plastic operation on the palate, a Kraske operation and others.

Dr. Reid Nebinger held a nose and throat clinic, during which he did two tonsillectomies.

Dr. C. E. Ervin conducted a medical clinic, taking up the "Hospital and Home Treatment of the Diabetic Patient." He began by saying that the doctor at home can do as much for his patient as the city specialist. He suggested that we first find out how bad a given case is. Keep him on his regular diet and test out to see how much sugar is being passed. It may be found to be 3 or 4 oz. daily. Next, diet down until the sugar free point is reached; then gradually up until sugar again appears. This gives the sugar tolerance.

In the treatment of the diabetic, he recommended that the diet or food be weighed out, so that the physician can thus definitely know just how much the patient is taking, and that the urine be tested daily. Cards, giving diet lists and other information for the care of the patient, were passed to those present, which could greatly simplify the treatment and conduct of the case. In the home treatment the patient must be encouraged to persevere, and if this is done, he can usually live out the ordinary span of life. Test the urine daily, for without this, there is apt to be failure. By the diet test, the diet can be checked up and this is one of the most important points in the conduct of the case. As guides, Joslin's Handbook and Mayo's Primer will be found useful.

Not the least interesting and helpful were the pathological demonstrations — Pathology of Goiter, Biochemistry in Medical Diagnosis—by Dr. R. A. Keilty, pathologist to the Geisinger Hospital. These demonstrations were held in the pathological laboratories of the hospital and attracted much attention.

After the morning session, all repaired to the Montour House, where they partook of a splendid dinner.

The afternoon session was held at the Montour County Courthouse, with the president of the society, Dr. H. V. Pike, presiding.

Dr. John H. Gibbon, Professor of Clinical Surgery, Jefferson Medical College, Philadelphia, was introduced and presented a splendid paper on "The Modern Surgeon." He began by noting some of the great changes which have taken place in surgical teaching and practice during the past twenty years. He said, to be a successful surgeon it is necessary to be well grounded in general sciences; the technique can easily be added. Surgical judgment must be acquired and all unnecessary operations are to be avoided. There is no room for carelessness. The family physician, surgeon, pathologist, assistants and nurses must all work together in order to produce results. We must use our knowledge and strive to make a proper diagnosis in all cases, but it is better to make a wrong diagnosis than none at all. We must exercise judgment in the preparation of the patient, and we must not operate at the direction of another. The surgeon needs self-confidence to enable him to carry out what he undertakes. We should not plate all fractures.

Dr. H. L. Foss, in discussion, said that Dr. Gibbon had pointed out many surgical defects. He was sure much needless surgery had been done in the past, is still being done, and is to be avoided. Only a small portion of fractures are to be plated; a much greater proportion are to be treated nonsurgically. There must be a working together of all forces—medical, surgical, pathological and special.

Dr. J. W. Bruner felt that our colleges are not a little at fault: they make the student incline too much to surgery; medicine is made to appear to them too dull, and they are therefore inclined to neglect its serious study.

Dr. H. V. Pike much appreciated the paper and said our society was to be congratulated in having Dr. Gibbon with us. Touching on the subject, he said it was necessary to weigh cases, for and against operation, especially in the insane.

Dr. Gibbon, in closing, said that every operation has its field and should be made to serve a distinct purpose. We must teach by example and start our internes in the right direction.

The other speaker of the afternoon was Dr. J. M. Baldy, State Director of the Department of Public Welfare, who gave a forceful talk on "The Care of Mental Defectives, the Insane and Prisoners in Pennsylvania." He started out by saying that he felt much at home in Danville; that he had been born here, had swum in the river, played on the streets of the town, had robbed its orchards and done various other things which a boy was expected to do. He felt at home with physicians and had addressed physicians for the past forty years.

When this new Department of Public Welfare was being organized, the Governor felt that he, Dr. Baldy, was the man best equipped for the work and had therefore selected him for it. He had not sought the position. The work was now one year old.

Dr. Baldy said, in taking up the work of his new department, a survey had been made of all the institutions for the care of the insane. In many institutions he found their care to be inadequate, especially in many of the county institutions, too little attention being given to the individual case. He had revoked the licenses in 19 counties and more would follow unless improvement was shown. And yet there was not room in state institutions for all who needed such care. He held that state institutions should care for all the insane, and county institutions should be done away with. Referring to the State Hospital for the Insane here at Danville, he declared it had one of the best superintendents in the state, and that the institution was one of the best. But he felt sure there were too many patients in our state asylums; at least 20% could and should be sent home. There were too many indigent and senile cases in the hospitals. These should be sent home and their friends and the local poor authorities should be compelled to take care of them.

Turning to the care of prisoners, he thought it a mistake to confine men in jail. He feels that it makes them worse and not better. They should be put to work and thus be made, at least, to support themselves. To do otherwise is an economic loss which should be stopped. He would have all prisoners placed on farms, and thus given something useful to do. They can make bricks, as at Farview, and do many other useful things; and thus much could be saved.

Touching on the care of Mental Defectives, he said there are 30,000 feeble-minded persons in the state, and the two institutions which we have for their care are not being utilized as they should be. Many cases, indeed, receive no care at all.

Dr. H. V. Pike, in opening the discussion, said that great changes had taken place in the care of the insane during the past 25 years. The padded cell is a thing of the past, at least in state institutions, although it might still be found in a few county institutions. In the Danville Hospital little restraint is practiced. They aim to get them out of doors as much as possible. All those whose condition will allow are employed about the grounds and on the farms. At present about 300 are so employed, to the great benefit of the patients. He said they aim to get patients back to their homes as soon as possible. He felt that greater effort must be made to keep patients out of the hospitals, to have them cared for in their homes. Here the family physician must help. The hospitals are helping by doing community work and by establishing clinics at suitable centers. Fewer cases must be committed to the hospitals; only the really insane should be sent in.

Dr. R. A. Keilty said that public welfare work was in a hopeless state of confusion when Dr. Baldy and his coworkers took hold of it, but now better things are in prospect. In our attempt at segregation and relieving some of the congestion in our insane hospitals, we must not release the hopeless cases. If cases are in wrong institutions they should be taken out and put in the proper ones. He regarded it as essential that we should get into the home and look after the children. Then, as time goes on, there will be less need for institutions for the care of the insane and mental defectives.

The question was raised, what shall be done with the senile cases?

Dr. Keilty suggested that our society pass a resolution, at its next meeting, commending Dr. Baldy's work.

Dr. Baldy, in closing the discussion, said the senile case was an almshouse case and the only one which should be in it. Of the feeble-minded cases, and we have about 30,000 of them, only about 3,000 are given systematic care. We can start by removing all such cases from the county insane institutions, and then gather all other cases and place them in suitable institutions to be provided by the state. The state should especially care for all educational cases.

Physicians were present from the several counties as follows: Northumberland, 19; Montour, 17; Columbia, 10; Luzerne, 8; Lycoming, 7; Union, 6; Snyder, 2; Chester, 1; Washington, 1; Dauphin, 1, and Philadelphia, 1; total, 73.

No further business appearing, the meeting adjourned J. H. Sandel, Reporter.

NORTHAMPTON—SEPTEMBER

The September meeting of the Northampton County Medical Society was held on the fifteenth of the month, at Seip's Café, Easton, at 11 a. m.

The secretary being absent, Dr. Tillman was chosen secretary pro tem, and Dr. Dever as chairman, in the absence of both the president and the vice-presidents. Later, the president, Dr. Santee, arriving, assumed his duties.

The minutes of the regular June meeting were read and approved as read. A communication from the Olmstead County Medical Society, Minnesota, stating that "Dr. Francis S. Chambers has been elected a member of the Olmstead County Medical Society," was read.

A letter from the superintendent of the State Homeopathic Hospital, Dr. Klopp, was read, extending an invitation to attend a joint intercounty meeting on the third Friday in October, this being an annual affair.

A letter from the American Association of the Medical Milk Commissions, Dr. R. R. Ferguson, Secretary, was read, stating that they would "appreciate it if you will give us the personnel of your Milk Commission, together with their addresses," and that "neither have we received the membership dues of $15.00 to the National Association."

A letter from Dr. Henry D. Jump, of Philadelphia, was read, with reference to finding "space in the next issue of your *County Medical Society Bulletin* for a reading notice in a country-wide effort on the control of cancer, next fall."

The censors reported the approval of the application for membership of Dr. L. F. Burkley, of 362 Berwick Street, Easton. They also reported on the application of Dr. Stephen S. P. Wetmore, 358 Taylor Avenue, Easton, of the Easton Sanatorium, favorably, provided he is to hold active membership in the Northampton County Medical Society only. The secretary was instructed to find out the necessary details and that action on his election was to be held over until our next regular meeting.

It was regularly moved and seconded that Dr. Louis Franklin Burkley, Jr., be elected, which motion carried unanimously.

The aplications of Drs. Carl Gains, Easton, Johns Hopkins; Howard Ott, Baltimore, Maryland College; Charles H. Boyer, Easton, graduate of Jefferson College, and Jacob W. Kline, Easton, of the Medico-Chirurgical College (their sponsors being the secretary and Frederick A. Sherrer, of Easton) were received and on motion were referred to the censors.

The committee on the county tubercular hospital proposition reported a large number of signers to the petitions.

The July or "Outing Meeting" Committee, Dr. Tillman, chairman, reported that there were forty-three members present. There was contracted a bill of $156.20 for dinners, cover charge, cigars and liquid refreshments. A deficit, amounting to $51.20, was incurred. The courtesy of the Club was extended through our vice-president, Dr. Paul Correll, and the bill was paid by him. On motion the bill was accepted and made a matter of record, the deficit having been paid to Dr. Correll by the secretary-treasurer on its receipt by the society. Dr. Thomason moved and Dr. Estes, Sr., seconded the motion. Carried.

The Milk Commission reported progress. Dr. Sherrer moved that the committee be continued for a more complete report, which was seconded by Dr. Schmoyer. Dr. Estes moved an amendment "that they report at next meeting in full," which was accepted and the motion as amended was passed.

The Necrology Committee appointed to act on the death of Dr. Hoey, of Easton, registered an account of their deliberations which was on motion of Dr. Estes, seconded by Dr. F. A. Sherrer, received and filed, with the provision that a copy be sent to the members of the family of Dr. Hoey.

The Committee on Revision of the Constitution and By-laws reported progress.

The president next introduced Dr. C. H. Muschlitz, of Slatington, the speaker of the day, who discoursed on the subject "Painful Feet." His talk was very enlightening and was much appreciated. He made it plain that painful feet were acquired conditions and not congenital.

The talk was discussed by the various members present and a rising vote of thanks was, on motion, extended to the speaker.

Under new business, Dr. D. H. Keller moved that we accept the invitation of Dr. Klopp, of the State Homeopathic Hospital, to meet with them on the third Friday of October jointly with other counties, and also to set a date other than that date for a cancer meeting, which was seconded by Dr. F. C. Roberts. Motion carried.

On motion of Dr. Tillman, seconded by Dr. Walker, it was decided "that the Cancer Committee communicate with Dr. Wainwright to arrange for a date and at the discretion of the committee the meeting be thrown open to the public. Motion so carried.

Dr. Estes moved that the society telegraph to Senators Pepper and Reed and Congressman Kirkpatrick, demanding an adequate tariff on dyestuffs and chemical byproducts, which was seconded by Dr. Keller. The motion carried. The vote was eleven for, three against, and the rest not voting.

William A. Finady, Reporter.

NORTHAMPTON—CANCER MEETING

An educational cancer meeting was held in the South Side High School Auditorium, Bethlehem, October 27th, at 2 p. m., to which the general public was invited.

The meeting was presided over by Dr. W. L. Estes, Sr., chairman of the Cancer Committee of the Northampton County Medical Society, and the program was opened with a paper by him, in which he gave an idea of what may be done to prevent cancer and what the surgeon may do to prevent cancer and what the surgeon may do to relieve sufferers after it has developed. It was a message of hope to cancer-afflicted people.

Dr. Jonathan M. Wainwright, chairman of the Cancer Commission of the State Medical Society, spoke on the "Vital Importance of the Early Recognition of Cancer and the Importance of Educating the General Public to the Message of Hope that Medicine Holds Forth."

Two men read papers on "The Proper and Early Treatment of Cancer," the first by Dr. J. Stewart Rodman, of the Graduate School of Medicine, Philadelphia, and secretary of the National Board of Examiners; and the second by R. M. Walls, D.D.S., of Bethlehem, whose message Dr. Wainwright expressed a desire to have published in order that its contents might reach a greater number of persons than can be addressed in a public assembly. Because the mouth is so frequently the seat of cancer Dr. Wall's paper assumed a particular interest and value in Dr. Wainwright's estimation.

Dr. Walls said: In speaking of cancer of the mouth I want you to bear in mind that I am including the lips, the tongue, the inside of the cheeks and the airspaces above the upper teeth, called sinuses.

Cancer appears most frequently on the tongue. Any portion of the tongue may be the seat of the attack, but the dorsum or back and the edges of the body are most often the affected parts. Next in order of frequency comes the jaw, with the upper jaw leading, due to the presence of the sinuses and their susceptibility to infection; then the mouth, which includes all the balance of the soft tissue, the gum and the cheeks; and lastly, the lips, with the lower lip being the seat of 80 per cent of malignant growths in that region.

Cancer of the lower lip is of two forms: the flat ulcer that appears at the margin of the lip and the skin, advancing slowly, remaining shallow, and surrounded by little indurations. This type may persist for years, and may sear over only to reappear. The second form shows more elevation of the borders, much more induration and deeper ulceration, with a distinct tendency to run along the mucous surface into the cheek or gum. This type is very malignant. The diagnosis of a well-developed carcinoma of the lip is usually simple, and rests upon the ulceration or scaley patch surrounded by induration and the fact that it has, as a rule, persisted for several months or years.

In the mouth or on the tongue a sore spot, a white patch, a wart, a fissure, an abrasion, pimple, superficial tubercle, or a deep nodule, a little plaque-like hard sore, smooth and polished but not ulcerated, are warnings. These warnings are definite and in the beginning are not cancer, but no one can tell when they will become cancerous, and no delay is safe. Every variation from normal to be seen or felt in these tissues, when a person has reached the cancer age, should be held under suspicion and the suspicion imparted to the physician. While it is important to make a diagnosis in advanced cases, it is even more important to make a diagnosis of the incipient ones. Remember that pain is one of the last symptoms of cancer.

One investigator reports a knowledge of 570 cases of cancer of the mouth. Of this entire number only 50 acted in time to permit of a successful surgical removal.

One of the greatest causes of cancer of the lip and tongue is smoking. That explains why men are so much more frequently affected in these parts. The holding of the pipe or cigaret holder, with the heat that they carry to the tissues, and the phenol in the smoke and the nicotine are irritants. The chewing of tobacco and the holding of the cud in the cheek is also a great tissue irritant.

The lips are very prone to cracks and fissures, making them susceptible. Bacteria of a nonvirulent type work their way into these injuries and prevent healing, creating another cause of cancer.

You will observe that the danger from ill-fitting plates is a great one. At certain periods the changes in the structures, both bone and soft tissues, are very considerable and that which would be considered a perfectly adapted plate to-day may three months hence be a source of continued irritation. Even well-fitting plates should be removed after each meal for cleansing. It is exceedingly important that they be removed upon retiring and allowed to stand in a solution of baking soda in water. A plate that fits well is a large vacuum chamber, that is causing a constant irritation of the tissues while it is in place. Keep these tissues toned up and rested by removing all plates and removable bridges upon retiring. Plates that are retained with patent suction appliances are very dangerous.

Taking the number of deaths from cancer from 1901 to 1904 in England and Wales, we find that there were 114,130, or 5.3 per cent of the total mortality. These were divided into cases affecting the alimentary canal, 71,559 cases, or 63 per cent; cancer of the sexual organs, 29,386 cases, or 26 per cent; and cancer of all other parts of the body, 11,856, or 11 per cent.

William A. Finady, Reporter.

PHILADELPHIA

October 25, 1922

The joint meeting of the Philadelphia County Medical Society and the South Branch opened with a paper by Dr. J. Torrance Rugh on "So-called Sprained Fractures of the Foot and Ankle." Dr. Rugh, after giving the definition of a sprained fracture as one in which a piece of the bone is torn away with the separation of the tendon or ligament, stated that the term is a misnomer, in that a fracture is a fracture wherever it occurs. He further stated that three essentials are necessary for the study of such a fracture: 1, that the sprained foot should never be diagnosed without an x-ray; 2, that the x-ray picture should be made in the proper manner by placing the part correctly, having the tube in the right place, and by taking the picture from several angles; 3, by correct reading of the plates. In connection with the latter statement Dr. Rugh talked on anomalies occasionally seen and the subsequent x-ray diagnosis of fracture. The treatment should be that of a fracture, however small the portion of bone may be.

Discussion was opened by Dr. Howard Moore, who mentioned the importance of care in treating the fracture of a sesamoid bone beneath the great toe. He pointed out the fact that a differentiation may be made by the jagged line of the fracture and the smooth line of the supernumerary bone.

Dr. Levi J. Hammond concluded the discussion by stressing the fact that frequent sprains with fractures occur easily at the ankle joint because of the lack of lateral mobility.

There was no further discussion and Dr. Rugh further laid emphasis on the margin for error and the importance of stringent treatment.

The next paper was by Dr. Howard A. McKnight on "Report of Some Unusual Surgical Conditions" and "New Splint for Fracture of Forearm."

(A) *Case 1* was that of a man stabbed in the left loin by a chisel. Passed blood in his urine and had severe pain in bladder region. At operation kidney was sutured, drain inserted and the patient progressed nicely without symptoms for two weeks, when had sudden pain in the kidney region, with subsequent hematuria. During the next month the hemoglobin fell to 12% even after transfusion of blood. Passed large blood casts 6 to 8 inches long. At operation an abscess was drained, kidney removed and patient recovered. It should be noted, Dr. McKnight said, that all surgical means possible were tried; that infection did not show for a month; and the possibility of operating with success when the hemoglobin was 12%.

Case 2 was that of a female, aged 24, who came in with a punctured eyeball, fractured skull and brain substance oozing from the scalp wound. An incision was made to the parietal suture, flaps turned back and bones found mashed into small bits, the frontal bone fractured into the orbit laterally, orbital bones fractured, and nasal bones fractured. The bones were retracted, the orbit enucleated and the patient was discharged, recovered with no mental impairment.

Case 3 was that of a male, showing recurrent perforations of the stomach and duodenum over a period of 20 years. With his third attack and operation, the pylorus was found almost occluded and a posterior gastro-enterostomy was performed. He died on his sixth admission, from peritonitis, three days after the perforation.

Case 4 was that of a woman who, while engaging in a fight, fell from the second-story window, landing on her buttocks. She suffered: 1, a complete transverse fracture of the left side of the sacrum; 2, complete separation of the pubic bones; 3, complete transverse fracture through the acetabulum; 4, fracture of the ischium; 5, complete fracture of the descending ramus of the ischium; 6, fracture of the tuberosity of the ischium. Fractures were reduced under an anesthetic. Patient was slung 4 inches from the bed. Recovered, walking with a slight limp.

(B) Dr. McKnight exhibited a new splint for use in fracture of both bones of the forearm. The frame is made of a light metal and consists of parallel rods which fit into tubing. At the distal rounded ends a glove is attached, into which glue may be poured to harden around the hand. Between the parallel rods there is a sling and at the proximal end a shield into which the arm fits. Much traction may be made. It may also be used for fractures of the humerus, the especial advantage being the fact that pressure is not exerted on the blood vessels and nerves.

Discussion by Dr. James H. Baldwin followed. Case 1. He thinks that operation should be early to prevent infection. He instanced a case with death as the result of delay. Case 3. Dr. Baldwin reviewed briefly the works of Rosenau, in which identical infections were produced in animals by the injection of human cultures. It has been shown that gastric ulcers may be produced by injecting a culture from the teeth of a patient suffering with that condition. In regard to the splint he said that it may be opened for dressing a wound or for fluoroscopic work.

The discussion was continued by Dr. Eugene C. Murphy. He asked why a carefully sutured kidney should bleed for one month, and also why transfusions were not resorted to before the hemoglobin fell to 12%. Case 4. He described a similar case with the return of full motion. Dr. Murphy considered the splint good but said that it should not be used to reduce the bones by traction.

Dr. McKnight, in answering, stated to Dr. Baldwin that no infection of any kind was found in the patient with gastric ulcers, and that they did not know at the time of the first operation that the chisel had gone through the kidney, as they saw only a groove into the cortical tissue. As to the splint, it may be used to reduce, when the patient is anesthetized, by manipulation of the rods and by the aid of the fluoroscope.

Dr. Theodore M. Johnson presented a "Report of a Rare Case of Fracture of the First Rib." Such a fracture, Dr. Johnston stated, is due to direct force in depressing the shoulder and clavicle. A case was reported in which a patient fell on left scapula with head flexed to right. Fifteen minutes later pain developed on respiration and in movement of left shoulder. X-ray showed fracture of the tip of the transverse process of first dorsal vertebra and fracture at the angle of the first rib.

Dr. John A. McGlinn followed with a paper on "The Present Status of the Surgical Treatment of the Uterus." Dr. McGlinn first reviewed the different methods which have been used during the last 25 years, beginning at the cautery which was discarded because so few understood the proper technique, and taking up the use of quinine and acetone, the cautery of Percy, the cancer juices and x-ray. All are disappointing, he said. Now radium is being used. The following he gave as the present-day treatment of cancer: Radium is used for inoperable carcinoma to allay symptoms, to stop the bleeding and pain and lengthen the life of the patient. In operable cases radium is used before operation, the uterus is removed, and a large dose of x-ray is given afterwards. Radium is the greatest thing that has come out, but it may fail. Attempts are now being made to treat metastasis by abdominal incision.

Discussion by Dr. W. F. Morrison. He said that radium would bring an inoperable cancer to operation. The cautery would remove the cancer but the patient would always have a discharge and it was hard to do subsequent operations.

There was no further discussion.

November 8, 1922

The Philadelphia County Medical Society opened its meeting of November 8th with a paper by Dr. Louis Klein, "Milk Production and Milk Hygiene." Dr. Klein, in his opening remarks, said that milk was intended to be delivered directly into the stomach of the offspring of the cow but since the consumers are so far away from the producer it must pass through many hands. Milk may be infected in the following ways: 1, from the skin of the cow, which holds dust particles and bacteria; 2, from the hands and clothes of the milker; 3, from the milk pail; 4, from the water with which the milk vessels are washed; 5, from a definite infection which the cow holds in her body, such as tuberculosis or an inflammation of the udder, etc. Contamination in the above manner, Dr. Klein continued, could be largely prevented by having the cow groomed before milking, by having the milker wash his hands before and after milking each cow, by having the top of the pail partly covered, by having the water supply from a pure source, and by having good medical attention given to each cow. The health of the cow is of great importance. Tuberculosis may be detected by applying the tuberculin test, and mastitis by a visible change in the milk. Typhoid fever may be introduced through the water used in washing the milk vessels. Dr. Klein thinks that education of the dairyman is the thing of greatest importance.

Discussion was opened by Dr. H. W. Turner. The state milk hygiene laws have divided the responsibility between the Agricultural and Health Departments.

Pennsylvania at the present time is requiring a tuberculin test to be taken annually. If the test is positive the cows are either disposed of or held until they give a negative result. An inspection of the stables is also required.

Dr. J. Claxton Gittings spoke on "Certified Milk." Dr. Gittings said that in 1872, 100% of foundling bottle-fed babies could be expected to die, but now with proper intelligence used, 100% could live. He laid down the following specifications for certified milk: 1, it must be unheated; 2, it must be free from unpleasant taste and smell, of the right consistency, and no preservatives may be used; 3, it must have less than 10,000 bacteria per cubic centimeter; 4, it must have no pathological bacteria; 5, it must have the required amounts of fat, carbohydrate, and protein; 6, it must be immediately cooled and kept at 45 degrees; 7, each bottle must be capped with the day of production and the hour. The cows are given careful medical attention, and the milker must have a throat culture taken twice a year, his stools are studied, a complete physical examination is given him, and if necessary, a blood Wassermann is taken. Dr. Gittings gave as the great objection the price of the milk, but stated that pasteurized milk could not be depended on for infant feeding.

Discussion followed by Dr. Alfred Hand. The reason for its existence, Dr. Hand brought out, was the fact of the great demand for it. He stated that the production of certified milk deserved more credit, and he emphasized the great need of more adequate state laws.

Dr. David Bergey read a paper on "Pasteurized Milk." Dr. Bergy, after giving a brief review of the work of Pasteur on the fermentation of beer and the method which was later used upon milk, stated that pasteurization of milk was introduced into the United States in 1893. In 1894 it was thought that milk should be subjected to a temperature of 150 degrees F. in order to kill the pathogenic bacteria, but later it was found that too high a temperature caused a throwing out of the lime salts, a precipitation of the proteins, a loss of the vitamines, and interference with the cream line. In 1913 the New York Milk Commission stated that 145 degrees F. held for 30 minutes will kill even the tubercle bacillus. The spores are not killed at this temperature, but are usually harmless. Pasteurized milk protects against certain transmissible diseases but it costs more than raw milk. Dr. Bergey showed some charts which gave a very clear picture of the decrease of intestinal diseases, such as typhoid fever, enteritis, etc., since pasteurized milk has been in use.

Discussion was opened by Dr. A. C. Abbott, who said that pasteurization was opposed at first because it was thought that there would be a lowering of the standards of the milk producers, but it has been definitely shown that this need not be the case and that by caring for the milk in this way disease may be markedly decreased.

Dr. J. P. Crozer Griffith presented "Commercial Milk Modifications and Milk Substitutes." According to Dr. Griffith, cow's milk diluted with water is one of the best modifications. Dried milk has certain advantages, in that it may be used when traveling, when fresh milk is not available, and when the infant needs a low fat diet; but, it cannot be diluted in such a way as to simulate human milk, since a dilution will correct the high protein and carbohydrate content but decrease the fat. Dr. Griffith says that it should never be given when fresh milk can be obtained. The vitamine principal is lost. Condensed milks have the same advantages as do the dried milks, but if used alone show a tendency to produce rickets. The proprietary foods are at fault because of the impossibility of getting the correct proportions in the dilutions recommended. One of the worst faults, Dr. Griffith declared, was the fact that they are put out on the assumption that they will be suitable for *all* babies. Buttermilk, malt soup, etc., are good and should be used in certain diseases, by a physician who understands their use.

Discussion was opened by Dr. William N. Bradley, who said that proprietary milks fail to meet the facts that a food must be adjusted to an infant's digestive tract and that the food must be free from bacteria. An analysis of two of these foods found a large number of bacteria and discovered that the dilutions given would not measure up to the standard amounts of the necessary constituents. Excessive fat causes flabbiness and lowered resistance. Condensed milk affects the bone. Starch attacks the gastro-intestinal tract. Mental retardation is an important factor.

SOMERSET—NOVEMBER

The Somerset County Medical Society met in annual session at Somerset on November 14th. The attendance was not as large as it should have been for the election of officers, which was the most important part of the meeting.

Dr. W. P. Shaw, of Berlin, was elected president for the coming year; Dr. C. T. Saylor, of Rockwood, vice-president; Dr. Carl W. Frantz, of Confluence, was reëlected treasurer; and Dr. H. C. McKinley, of Meyersdale, was reëlected reporter for the thirty-third consecutive term.

The reports of the treasurer and secretary for the past year were found correct and were approved.

We have had some very fine meetings during the year and hope that all the meetings of the coming year will at least be as good as the best this year.

This was the day for the Cancer Meeting in this county. Our Cancer Committee had advertised it in all the papers in the county, to which the public was invited, and as soon as our business was done, the meeting was merged into the Cancer Meeting. Dr. Basil R. Beltran, of Philadelphia, was the speaker on this occasion, and his address, which was intended mostly for the laity, was very fine indeed, but it is to be regretted that the laity did not avail themselves of the opportunity to learn something greatly to their benefit.

Dr. Beltran told of the fearful mortality from cancer, of what may be its origin, of its stealthy, painless approach and progress, and of the final fearful suffering and death therefrom. This was the dark side, but he then told of the *hope* there is that all, or at least very much, of this suffering can be avoided. Early attention to abrasions, bruises, pimples, warts and any growth or enlargement was given as the basis for the *hope* of relief.

It may be that the members present have all read and heard before what Dr. Beltran told us, but it cannot fail to spur the physician to renewed watchfulness for his clientele. Only four or five of the citizens availed themselves of the opportunity to hear this very hopeful address and advice. This meager attendance of the laity should not discourage this method of teaching, and if possible we will try to have Dr. Beltran repeat his lecture in the southern part of the county, or have some one else talk to our people on the important subject of cancer.

H. C. McKinley, Reporter.

WARREN—OCTOBER

The October meeting of the Warren County Medical Society was held at the State Hospital and was attended by eighteen members of the society. The program was in charge of the junior members of the State Hospital. Dr. Woodhouse described some of the tests for kidney function and interpreted their meaning in cases of arteriosclerosis. The history of a patient, whose systolic blood pressure was 242 and diastolic 142, was then related and a description given of how the several tests were used.

Dr. Petry told of some tests made with Bacillus acidophilus for chronic constipation. This bacillus is normal in breast-fed infants, but disappears after weaning. If 300 c.c. of a pure culture is fed to an individual, 90% of the intestinal flora will be acidophilus. If lactose is fed, the B. acidophilus will grow in the intestines to a much greater extent. There were no special results obtained in bedridden patients suffering from constipation. In ambulant cases the results from feeding lactose and cultures of acidophilus were similar to those obtained from the use of bulgaricus. In chronic typhoid carriers lactose feeding, by increasing the acidity of the feces, may inhibit the development of typhoid bacteria.

Dr. Martin reported the use of cyanide of mercury intravenously twice a week as being as effective in some cases of syphilis and much more economical than salvarsan. In paresis, while it does not greatly influence the laboratory reactions, it improves the metabolism and to some degree, the mental condition.

At the conclusion of these three reports, Dr. Darling announced that a neuropsychiatric clinic had been established at the hospital, to which physicians were invited to send cases for observation and study and laboratory tests, and that the staff of the hospital is desirous of helping in every way possible the schools and child welfare workers in detecting mental disease early.

A very fine luncheon was then served by the members of the staff. M. V. Ball, Reporter.

IN MEMORIAM

DR. J. J. COFFMAN

Whereas, It has been the will of God to remove from amongst us our colleague, Dr. J. J. Coffman, and

Whereas, It is proper that we should give expression to our great loss, and to extend to his family our heartfelt sympathy in their bereavement; therefore, be it

Resolved, That we express our deep sorrow for the loss that the Society has sustained by the removal of its most useful member, who filled the office of secretary with marked punctuality, zealously watching the welfare of that body, conducting its affairs with efficiency, so that his loss to the Medical Society seems irreparable. He was a man unassuming in manner, of deep religious convictions, lovable and tender in his family relations, just in his association with his fellow man, attributes that will endear him in the memory of his friends; therefore, be it further

Resolved, That these resolutions be spread upon the minutes of our proceedings, that a suitable copy be sent to the bereaved family, likewise a copy sent to the public press and the Pennsylvania Medical Journal.

The Medical Society of Franklin County.
J. K. Gordon,
S. D. Shull,
J. E. Kempter,
Committee.

ROLLO HOWARD HOEY

1886—1922

It is with deep regret that we register the death of our esteemed member, Dr. Rollo Howard Hoey, of 357 Bushkill Street, Easton, Pa. He was a son of Mr. Edgar Daniel Hoey and his wife Emma A. Porter Hoey; born May 21, 1886, at McKeesport, Pa.; died May 21, 1922, at the Physiatric Institute, Morristown, New Jersey, and was buried at Texas Church, Allegheny County, Pa. The cause of death resulted from conditions diagnosed as trench fever and shell shock, contracted while in military service, "a cardiorenal break following."

Dr. Hoey attended and graduated from the grade and high schools of McKeesport, Pa. Later he attended and graduated from the Shady Side Academy, Pittsburgh, and Washington and Jefferson College. He studied medicine and graduated from the Medical Department of the University of Pennsylvania in the class of 1909. He served as internist at the Easton Hospital during 1910, after which service he located permanently in Easton, practicing general medicine and surgery from 1911 to 1917, when he volunteered his services and was commissioned, with the rank of Captain, in the United States Medical Reserve Corps. He was sent overseas early, and saw eight months' foreign service with the British Expeditionary Forces, returning home ill, spending three months in the hospital. While under medical treatment he was placed on the staff at the base hospital, Lakewood, New Jersey.

Doctor Hoey was discharged from the service June 5, 1919. Following his discharge he spent one year at Linehurst, North Carolina, to recuperate his health. Benefiting therefrom, he took a postgraduate course in metabolic work under Dr. F. M. Allen, at Morristown, N. J. He now returned to Easton and resumed his general practice, specializing in metabolic work and surgery.

He was a member of the Pomfret Club and other fraternal associations. His chief pleasures and recreations were golf and thoroughbred horses. His nearest surviving relatives are his wife, Beatrice Gardner Hoey, and his father, Edgar Daniel Hoey.

The death of Dr. Hoey came at an inopportune and unripe age. He was but thirty-six years old—too young to enter into "life that shall endless be,"—so quiet, so restful, so peaceful—still. The usual and the familiar was very untimely and is greatly and sympathetically lamented and shared with the relatives and friends that were left by his demise.

The Doctor was a substantially gifted medical practitioner, had marked proclivities and abilities towards surgery, was highly regarded and loved by all those who knew him—those of his profession, his neighbors and many associates. He enjoyed an ever growing practice, clientele and prestige, and enjoyed his vocation most thoroughly.

We miss him at our monthly meetings; we miss his cheery smile and warm and gladsome handshake. We repress our emotions of regret and sympathy at his untimely death and let them repose in the repertory of love and memory.

We tender his wife, father and friends our sincerest sympathy and condolence.

Paul Correll,
W. Gilbert Tillman,
Harry E. McCormick,
Committee.

STATE NEWS ITEMS

DEATHS

Dr. Horace Mortimer Lacock, of West Finley, died on October 23d. He was born in 1875 and was a graduate of Jefferson Medical College of Philadelphia in the class of 1902.

Dr. G. Ashton Bardsley, of Philadelphia, died on October 26th, at the aged of 47 years. Dr. Bardsley was graduated from the University of Pennsylvania School of Medicine in 1897.

Dr. George W. Dille, of Cooperstown, aged 73 years, died from heart disease on October 25th. He was a graduate of Western Reserve University, School of Medicine, Cleveland, Ohio, in 1872.

Dr. E. J. Butler, of Wilkes-Barre, aged 62 years, died from a stroke on November 6th, while eating his midday meal. Dr. Butler was graduated from the College of Physicians and Surgeons, Baltimore, in 1893, and was a native of Pottsville.

Dr. Francis J. Lammer, of Philadelphia, died on November 14th. Dr. Lammer was born in 1864, and was graduated from the Medico-Chirurgical College of Philadelphia in 1898. He was also a member of the American Medical Association.

Dr. Emanuel A. Alleman, a member of the Columbia County Medical Society, died at his home in Berwick on October 16th, following a serious illness of several months. Dr. Alleman was born in 1852 and was a graduate of the Medico-Chirurgical College of Philadelphia in 1890.

Dr. Robert M. Bolenius, of Lancaster, aged 75 years and one of the oldest doctors in that city, died at his home on November 13th, from heart trouble. Dr. Bolenius was a graduate of the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1873. He was secretary of the Lancaster School Board for twenty-five years, a member of the city health board and a former president of the Lancaster County Medical Society. His widow and three children survive.

Dr. Percy Musgrave, of Doylestown, a lieutenant colonel in the Medical Reserve Corps of the United States Army, killed himself on the morning of October 25th, with the army revolver he carried overseas. Dr. Musgrave was an honor graduate of the Harvard Medical School and for some time practiced in Boston. He was a member of the original contingent of thirteen American physicians who offered their services to England before America entered the war. He served with the British Army and was later transferred to the American Army. Surviving Colonel Musgrave are his widow, from whom he was separated, and three children. His wife, before her marriage, was Miss Edith Porter, daughter of a professor at Harvard.

Dr. William Douglas Haight, of Johnstown, died on October 23d, aged 63 years. He was a graduate of the Rush Medical College of Chicago and began the practice of medicine in South Dakota. In 1890 he left for Hondo, Mexico, where he had accepted a position as physician and surgeon to the Alamo and Coahuila Coal Companies. After spending five years in Mexico he located in Johnstown and became associated in practice with his brother-in-law, Dr. J. C. Sheridan. In 1902 he established the Municipal Hospital and for many years he was on the staff at the Conemaugh Valley Memorial Hospital, being associated with the Department of Roentgenology. He was also an examining surgeon for the Lorain Steel Company. Dr. Haight was a member of the American Medical Association and the National Electro-Therapeutics Association.

MARRIAGES

Miss Imogen Baldwin and Dr. Maurice S. Redmond, both of Pittsburgh, were married in Youngstown, Ohio, September 2d.

Miss Martha Harkness Edwards, daughter of Dr. and Mrs. Ogden M. Edwards, Jr., of Pittsburgh, was married to Mr. John McKelvy Lazear, of Pittsburgh, in the Shadyside Presbyterian church, November 4th.

Dr. William A. Bradshaw, of Pittsburgh, and Miss Helen Logan, daughter of Mr. and Mrs. Frederick Logan, of Carnegie, were united in marriage at the Logan home, October 28th, and will make their future home in Pittsburgh.

Announcement has been made of the recent marriage of Dr. Joseph Fullmer, of Williamsport, and Miss Alma Rosanna Linck, daughter of Mr. and Mrs. Daniel Linck, of Nauvoo. Miss Linck was a nurse at the Williamsport Hospital. After a wedding trip to Bermuda Dr. and Mrs. Fullmer will reside in Philadelphia.

Dr. D. E. Berney, of Scranton, and Miss Rose Marie Quittelier, of Brussels, Belgium, were married in the Cathedral at Brussels, on October 30th, the marriage being the culmination of a war romance. The pair met during Dr. Berney's service in France. The bride is a niece of General Emil Gauthier, chief of staff in the Belgian Army during the war.

ITEMS

Born to Dr. and Mrs. R. J. Bower, of Williamsport, on October 30th, a daughter.

Dr. J. P. Harley, of Williamsport, has been elected to a fellowship in the American College of Surgeons.

Dr. A. F. Hardt, of Williamsport, attended the annual meeting of the American College of Surgeons, at Boston, during October.

The Commissioner of Health has appointed Harry H. Buch, Second and State Sts., Harrisburg, a distributor of state diphtheria antitoxin.

Dr. Frederick S. Baldi, Philadelphia county prison physician, while driving his automobile recently, struck and killed a four-year-old child at Eighth and Kimberley Sts., Philadelphia.

Dr. W. W. Richardson, who has recently been devoting most of his time to neuropsychiatric practice in Erie, has returned to Mercer to become again the resident medical director of the Mercer Sanitarium.

The residence of Dr. A. J. Crewitt, of Newton, came near being destroyed by fire recently. Fortunately, the blaze was discovered by Dr. Crewitt's daughter and the fire was extinguished by chemicals before much damage was done.

W. E. Delaney, Jr., a senior in the Jefferson Medical College, Philadelphia, and son of Dr. W. E. Delaney, of Williamsport, has been elected life president of the 1923 class. There was quite a contest for the honor and Mr. Delaney won out by a large majority.

Miss Elizabeth C. Dercum, daughter of Dr. and Mrs. Francis X. Dercum, of Philadelphia, has had a picture accepted in the Paris Salon at the autumn exhibition. Miss Dercum was a former student at the Pennsylvania Academy of the Fine Arts, and is now living at Moret, a suburb of Paris.

Dr. Charles J. Hatfield, a member of the Board of Trustees of the University of Pennsylvania, was recently reëlected Chairman of the Southeastern Pennsylvania Chapter of the American Red Cross. The chapter now is mobilizing its forces for an intensive campaign for clothing to be sent to Smyrna refugees.

The Sixteenth Conference of Industrial Physicians and Surgeons was held in Pittsburgh on November 17th. Dr. Frederick L. Van Sickle, Executive Secretary of the Medical Society of the State of Pennsylvania, read a paper at the afternoon session on the subject of "Revamping Medical Legislation in Pennsylvania."

Colonel M. A. Delaney, Medical Corps, U. S. A., of Philadelphia, was decorated in Washington recently with the Distinguished Service Medal for service in France during the war. The presentation of the award was made by Secretary of War John M. Weeks. During the presidency of William H. Taft, Colonel Delaney was the White House physician.

Early in October Dr. J. Blair Spencer, assistant director of the Department of Public Welfare, Harrisburg, was threatened with blindness due to the action of sulphurous gases while passing through the Pennsylvania Railroad tunnel at Baltimore while en route to Washington. Although at first it was feared that total blindness might ensue, Dr. Spencer has completely recovered from his experience.

LOUIS PASTEUR

The centenary of Pasteur will be celebrated in Philadelphia on December 27th. A committee, with Dr. W. Duffield Robinson as Chairman, and Dr. McCluney Radcliffe, 1906 Chestnut St., as Secretary, is in charge of the arrangements. An afternoon mass meeting in the Academy of Music, with a banquet at the Bellevue-Stratford in the evening will bring together many scientists of world-wide recognition and reputation.

On October 24th the new Nurse's Home was formally turned over to the Citizens' General Hospital of New Kensington. The building, which was erected at a cost of $125,000.00, was the gift of Mr. and Mrs. H. E. Kinlock. The citizens of New Kensington, in a six-day campaign, raised $175,000.00 additional for the hospital. Of this $80,000.00 is to liquidate indebtedness and $70,000.00 is to be used for an endowment fund.

GENERAL NEWS ITEMS

Dr. Frederick R. Green, for eighteen years identified with the American Medical Association as Secretary of the Council on Health and Public Instruction, has resigned to become editor of *Health*, a popular magazine for the people, telling them the facts regarding the present-day knowledge of disease and its prevention, of health and its conservation and, especially, the value of trained, scientific physicians and of their services to the individual and the community.

The New Home of Hynson, Westcott & Dunning of Baltimore.—This national drug firm has just erected and occupied its own building at Charles and Chase Streets, Baltimore. The building is artistic in appearance and adapted to accommodate the several departments of their rapidly developing business which began in a small way in 1889, but has grown to a million a year, with an organization of 125 people. Their unique sales department alone comprises 19 men who visit physicians in all parts of the United States but do not sell goods. Thirty-five of their products have been accepted by the Council, and are advertised in this Journal. None of their preparations are offered direct to the public but are introduced to the medical profession for the use of physicians and their patients. Mr. H. P. Hynson, one of the founders, died in 1921; but their growing business has now been established in new quarters under the immediate supervision of Messrs. James W. Westcott and H. A. B. Dunning (the later being the active administrator) with a highly trained force, equipped to meet promptly the demands of the medical profession anywhere and at all times.

Important Announcement.—The medical profession everywhere will be interested in the announcement that The Abbott Laboratories of Chicago have purchased the Dermatological Research Laboratories of Philadelphia. This is an advance step for The Abbott Laboratories and will give them deserved recognition among the leading manufacturers of medicinal products.

It will be remembered that the Dermatological Research Laboratories were the first in the United States to produce arsphenamine during the war when there was such a scarcity of this article; and these Laboratories became well known to the medical profession for their patriotic attitude in developing and manufacturing medicinal preparations in this country. By this purchase of the "D. R. I." products, The Abbott Laboratories inherited their prestige.

The Abbott Laboratories acquired control of the Dermatological Research Laboratories on November 1st, and are continuing to operate them in Philadelphia under the direction of Dr. Geo. W. Raiziss, head of the department of chemistry, and his corps of specially trained assistants. Orders for "D. R. I." products will be promptly filled from the Philadelphia Laboratories or from the home office of The Abbott Laboratories, Chicago, or by any of their branches or distributors.

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ADDRESS

GRADUATE TRAINING FOR THE SPECIALIST*

GEORGE M. COATES, M.D.
PHILADELPHIA

For a number of years past the Chairmen's addresses before the large special societies of the country were concerned with the question of graduate training for the specialist, and the subject thus elaborated by Beck, Pierce, Mosher, Coakley and others has born fruit in the systematized courses of instruction given to-day, and the requirements by which a competent specialist is to be produced and recognized as such. Skillern took up the further development of the recently graduated specialist in his relation to the special societies and their work, and it is this idea that I will attempt briefly to develop a little more—the further training of the specialist after his course on fundamental work is accomplished.

Of necessity, the opportunities to acquire diagnostic ability or operative skill are limited in any curriculum attempted and even more so where the beginner has not had the advantage of a systematic course. How is he to acquire this skill so essential to the successful care of his dependent patients? It has seemed to me that such opportunities, inadequate as they are at present, are in danger of still further curtailment, while on the other hand, they could be and should be expanded.

What is the situation in this respect as it exists to-day and in the past? The specialist starting on his career in a small community without organized free hospital clinics picks up his technic as he can without help, since there is none at hand, and if he is ambitious, goes on as frequently as possible to larger centers where he can observe the work of others with larger opportunities. It is not a satisfactory method but perhaps it is the best that can be devised at present. But in the larger cities are the opportunities of the beginner any better? Private practice, particularly operative practice, grows slowly, so that his chance for acquiring operative skill from this source is limited during his early and most plastic years of development. Do opportunities to acquire this necessary skill quickly exist in the hospital clinics? To a limited extent, yes, but they are capable of much greater development. I plead for the extension of this super graduate training to its utmost capacity. I mean that every one in authority in a hospital service should feel the responsibility of seeing that his juniors are carefully supervised in their work, and that they are given opportunities to operate upon major as well as minor conditions under the guidance and with the assistance of a trained and experienced surgeon. Too many young men take the easily obtained position at the bottom of the list of assistants in a dispensary, where they treat cases in a routine way, often with too little study, perform minor operations without proper supervision, thus frequently developing errors of technic that are hard to eradicate later. Years go by and they may not even have had a chance to assist in the hospital operating room, much less to operate themselves. The dispensary work becomes a monotonous and distasteful thing to be hurried through for other interests. The current complaint that assistants nowadays are not reliable, not interested and not good workers is not without some basis of fact, but the fault is not always entirely with the assistant by any means. There is too little interest taken in his work and his development by his chief and too few opportunities of interest are thrown his way.

One main reason for this attitude towards the younger men is the present development of hospital services and hospital rules. In most hospitals perhaps one chief and one or two older assistants alone have the operating room privilege. In hospitals where a more liberal idea has prevailed in the past, there is now a tendency to restrict these privileges by combining services so that but half the former number of surgeons can operate. While it is perhaps easier for the hospital and possibly it increases to a degree the present efficiency of the hospital, it seems to me a shortsighted policy in the long run since it does not develop an adequate supply of trained juniors for the succession, it offers little or nothing in the way of advancement to those near the bottom of the list, it retards the general development of the specialty by not providing opportunities for the younger men, and it does not engender in them that loyalty and interest in their work without which such a service must be severely handicapped. An active service in a large hospital cannot be properly cared for by one man. Assistants are needed for emergencies, for vacation and illness, to substitute during attendance at medical meetings, etc., and it should be one of the duties of the chief to see that all his loyal assistants are so trained as to be able capably to fill his place or a similar place elsewhere if an opportunity occurs. Hospital boards should be impressed with this idea and urged to modify their rules accordingly. I do not mean that every green assistant should have the free run of the operating room. Far from it! He should at first assist, then perform small parts of the operation with his chief, and finally be assigned cases of comparatively little difficulty to do himself with an older man assisting to instruct, to guide and to safeguard the interests of the patient. The chief should always control the supply of operative material and decide, at least in a general way, who is to operate. The expressed objection that the younger men may, at times, operate without consent, should not hold good. A chief who has a loyal staff will seldom be taken advantage of. If he is a capable chief he will know how to maintain discipline. If he cannot do so, he should dispense with the services of unruly or disloyal assistants, or make way for someone who can run the service safely. There is an almost unlimited amount of material in most hospitals if it is properly worked up and taken care of. This will in turn give ample occupation to a large number of assistants, and such assistants can be obtained if they see a chance to acquire skill and knowledge and an opportunity for advancement.

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*The Chairman's Address, delivered before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

A service so arranged, with properly grounded and trained assistants, with plenty of congenial and instructive work and opportunities appealing to their ambition, cannot fail to be a source of comfort to the chief, of incalculable benefit to the younger men, of safety and attention to the welfare of the patient, of credit to the hospital, of increase in scientific research and of improvement in the standing of our specialties. Where the spirit engendered by such means prevails, research work is and should be encouraged, cases of interest reported and the spirit of teaching and mutual helpfulness encouraged. Not only should the chief attend medical meetings, but the assistants should be urged to do likewise. With a large staff this can be arranged, whereas with a small one either the work must be neglected or many meetings cannot be attended.

Many famous men, notably Schambaugh and Mosher, advocate to a certain degree the graduate training of specialists by the old preceptorship method. Mosher asks all prominent men with large services and practices to take one or two such students a year for voluntary work. For this method to work out satisfactorily, changes in existing hospital regulations would be necessary in order that these volunteer assistants should have the requisite hospital privileges. The idea is a big one, entails much work (and incidentally much satisfaction) for a conscientious instructor, if it can be made practical. Hospital regulations and limited services are the main stumbling blocks as I see them. The outline of a chief's duty to his service and to his staff, as I have tried to express it, is, I think, in entire accord with this idea and perhaps will help in its solution.

So much for my appeal to those of you who have advanced to the stage of experience and responsibility for hospital service. To the younger man, who has the finer details of his subject to learn, his experience to obtain and his position to earn, I should like to offer a few words of advice and warning. After all is said, in one way or another his success or failure must depend in a large measure upon himself and upon the spirit in which he takes his work. In the cities, work itself at the bottom of the dispensary list is easily obtained by anyone who wishes to work for work's sake and for the increase of his knowledge. He must be willing and, at first, expect to do what is often called the drudgery of the service—history-taking, keeping of records, dressings and follow-up of cases. This work is by no means valueless, and by doing it well and willingly he proves himself deserving of advancement, encouragement and opportunity. He should be faithful and prompt in attendance, careful and systematic in his study of cases, slow and cautious in his operating, bearing always in mind the safety and comfort of his patient and the reputation of his service and his hospital. He must be loyal to his chief and his hospital, and remember that he must be deserving of privileges and not claim them as a right without their having been earned. He must, above all else, not be afraid of hard work at the bottom, for hard work, done cheerfully, is bound to contribute greatly to his sum total of knowledge, ability and self-confidence. Fundamentals should be studied conscientiously, whether a special degree or certificate is held or not. Reading should be divided between standard works and current special literature. Meetings of special medical societies should be attended whenever occasion offers and membership sought as soon as necessary qualifications are obtained.

The writer is often asked what is the proper method by which entrance to special societies is granted. In all of them, membership is granted on personal recommendation of members, in the first place, combined with an examination, a thesis, case histories, the record of work accomplished, or on the candidate's standing in his specialty. The recommendation is made because the proposer believes the candidate to be deserving of membership, as shown by his work, his published reports, his discussions, hospital positions held, etc. Therefore, the first thing for a candidate is to do such work as will justify his sponsor. He must in addition be able to pass his examination, if required, or to prepare a suitable thesis. To do these things he must have organized his work more or less according to the advice given above, i. e., to have read, worked hard and faithfully, studied his cases and kept his records carefully for use when the time comes for publication. The examination of the American College of Surgeons, for instance, consists in the presentation of 50 well worked out case histories of major operations done or assisted at. It pays, therefore, to start the history-taking and record-keeping habit at the earliest possible moment.

I trust, members of this Section, that you will pardon me for presuming to give advice whether to the old or to the young. I feel that those of us who have advanced to a certain stage owe a debt of instruction to the younger ones just entering the specialty; and that this latter group must deserve such instruction by hard and faithful work. Complete coöperation in this manner cannot but redound to the benefit of all, patient, physician and hospital alike.

I thank you, members of the Section, for the distinguished honor you have done me in electing me your Chairman for the present year. It is an honor I greatly appreciate since it comes from such a splendid body as this Section has always been and since I am successor to the many distinguished men who have held the chair before me. Your able and hard-working Secretary, Dr. Sears, has prepared a program which I think can hardly be surpassed, and should be credited with the success that I am sure this meeting will have. I will, therefore, detain you no longer and declare the scientific meeting open.

Dr. O. Pine queries: What becomes of the bales of resolutions passed at business meetings of state and county medical societies?

ORIGINAL ARTICLES

RELATION OF THE MENTAL HOSPITAL TO THE COMMUNITY*

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DANVILLE

It is a long cry from 1700 B. C., when mental disease was first recognized and the mentally afflicted were treated by the priests in the temple by incantation, purification and sacrifices, to the present year of 1922 with its modern hospitals and scientific treatment of mental patients. And yet we question, even to-day, despite the advances that have been made along all lines in mental medicine, if the medical profession in general or even those engaged in the treatment of mental patients in particular, fully appreciate the possible functions of the mental hospital and the importance and character of its relations to the community at large.

The time has passed when the elegant structures erected at the cost of many millions of dollars shall exist simply as places of refuge for those who, because of faulty mental functioning, are unable to adapt themselves to the environment in which they are placed and the arbitrary standards of conduct set by society. On the contrary, the mental hospital of to-day should stand as one of the medical centers of a community, bearing a dependable relationship to the mental health needs of those individuals residing in its hospital district. To this end it should be physically adequate, equipped for exhaustive scientific treatment and research, and provided with the special facilities and opportunities necessary thereto. Its affairs should be administered by a medical superintendent experienced in mental and nervous diseases and directly responsible to his superior body for its proper functioning. He should be assisted by a competent medical staff, nursing staff and personnel whose training will permit of the direction and application of their investigations along approved scientific lines.

The functions of such a hospital as related to the community are fivefold. Its relation to:

1. Mentally Diseased and Mentally Handicapped.
2. The Physicians in the Hospital District.
3. Public Health.
4. Legislation.
5. Public Education.

1. *The Mentally Diseased.*—The mental hospital bears a definite and decidedly personal re-

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lation to the individual members of a community, who, because of mental disease or mental defect, come under its care as patients.

These patients very naturally fall into one of two broad groups: (a) patients in whom the nature and degree of mental disorder permits the possibility of improvement or cure; (b) patients whose mental condition necessitates lifelong treatment and care.

For those patients of the first group the methods of diagnosis and treatment must be essentially and intensively individualized, and should consist of an exhaustive study of the individual as a whole. The mere pigeonholing of a patient under a stereotyped classification, as dementia præcox, manic depressive insanity, etc., while essential for statistical purposes, is after all a minor consideration and in fact often tends to an unwarranted unfavorable prognosis, with a resulting loss of interest in active treatment. It must be remembered that each patient is a law unto himself and that underlying his mental disorder there is some factor or combination of factors that have produced the condition, and the first essential in the handling of acute mental cases is the determination of the special hereditary, psychogenic, somatic and environmental factors that have contributed to the mental breakdown in the individual patient. When these are understood, hydro, physico, psycho, occupational and drug therapy may be employed with a good prospect of successful results.

For those patients in the second group, those whose mental disorder is essentially chronic, much more is demanded than custodial care, and the mental hospital that limits its efforts to the providing for these patients of maintenance, diversion and medical attention to physical ills, and makes no effort to provide for possible home adaptation and supervision during this adjustment, fails in one of its most important functions. It must be remembered that mental disorder does not of necessity imply insanity and the patient whose mental disease has become chronic, while his delusions and hallucinations may persist, if the mental condition does not give rise to disorders of conduct, is not a menace to society and may often with all safety be returned to his place in the community where he may be indefinitely cared for under proper supervision.

To fulfill adequately this first important function of the hospital, whereby there may be promoted the care or arrest of the disease, with restoration of the patient to his former social status and the supervision of his readjustment in the community, there must exist a mental hospital in the true sense, and a close relationship between this hospital and the community at large. The latter can best be established through the operation of a well-organized Community Service Department, with intramural and extramural social service workers under the direction of the Medical Superintendent and Director of Community Service activities. With such a department the patient cannot be shut away from the outside world. On the contrary, he is kept in active touch with his relatives and friends while in the hospital, and when his condition has so far improved as to make his return to his home on furlough advisable, he leaves the hospital confident of helpful advice and service as he again attempts to assume his social and economic responsibilities. Furthermore, for that class of patients who are without homes, employment, or friends, suitable environmental conditions may be found and the community assured of his personal supervision by a trained hospital worker.

2. *The Physician.*—The second great function of the mental hospital should be the establishment of definite relations with the physicians in the hospital district. The average physician practicing general medicine has but little time to give to the consideration of nervous and mental diseases, and as a result, patients are being continually committed to mental hospitals who could have been successfully treated at home. The mental hospital, with its wealth of clinical material, owes to the medical profession instruction along these lines. Its didactic and clinical material should be made available for the physicians of the community, in order that they may be enabled to recognize the early symptoms of mental disease and the therapeutic methods to be employed in their treatment. The general practitioner should be made to feel that the hospital stands as a postgraduate center in the community and that to its medical staff of trained psychiatrists, he may turn freely for consultation in those mental cases concerning the diagnosis and treatment of which he is in doubt.

3. *Public Health.*—Here again, there should be a very close affiliation between the mental hospital and the community as regards the prevention of mental disease and mental defect. The general hospital and the general practitioners assume the responsibility of caring for the physical health of the community, the schools attempt to raise its intellectual standard and the church becomes sponsor for its moral tone. Each of these, while potent agencies in the development of community, state and national life, are dependent to a large extent upon the mental health of the community. It, therefore, becomes incumbent upon the hospital for mental diseases to place within reach of the communities com-

prising its hospital district, adequate facilities for the preservation of mental health, the recognition of the early manifestations of mental disorder, and scientific study and advice concerning the solving of problems arising in the schools, courts and homes, as a result of conflicts between the normal members of the community and those of its number who, because of mental disorder or mental defect, present disorders of conduct that render them distinctly antisocial.

In the carrying out of this function the mental health clinic holds first place, for such a clinic equipped with expert diagnosticians and medical consultants, psychologists, psychiatric nurses and trained social workers forms one of the best avenues of approach to the mental life of the community. It should bear the same relation to the mental hospital that the outpatient department bears to the general hospital, and have for its goal-point the understanding of the individual's needs and the bringing about of a harmonious adaptation to the requirements of society. Its fields of usefulness will be found in the schools, where in the pupils the underlying factors of retardation may be discovered and corrected, the definitely feeble-minded recognized and properly placed for training, special aptitudes of superior children brought to light and developed, delinquent tendencies and abnormal habits studied and corrected.

Courts of justice and penal institutions will profit by an intensive study of the mental reactions of the criminal class by trained clinic workers.

Various charitable organizations will find the solution of many of their social and economic problems when the psychiatric thread running through the life history of the social misfits has been discovered.

Hence, the mental hospital, through the establishment of mental clinics, should study in a broad way the social and economic life of the community from a psychological standpoint, and take the leadership in all matters pertaining to mental health.

4. *Legislation.*—The mental hospital should stand ready to advise as to the proper legislative measures which will tend to aid in the prevention of mental disorders and advance the successful treatment of mental diseases.

No one realizes more fully than the medical officers of mental hospitals the necessity for legislation in the matter of the care and treatment of the mentally handicapped, and, contrary to the precedent that now exists, the opinion and judgment of these men should form the basis of all statutes relating to the questions of mental health. These men, who have devoted their lives to the study of the insane and feeble-minded, have long recognized the necessity for legislative control of the propagation of the mentally unfit with consequent economic loss, maladjustments in the home and schools, and conflicts with law and order. They realize the necessity of regulation by law of the status of the insane, feeble-minded and criminal classes, together with the establishment of proper facilities for their extramural and intramural care and treatment. It becomes, therefore, a definite function of the mental hospital to serve in any capacity in drafting or procuring such laws as may be necessary to simplify and render more efficient the solving of these problems which organized society is called upon to face.

5. *Public Education.*—The progress and final attainment of any ideal of great moment dealing directly with the basic fabric of human economy, such as prevention and treatment of mental disorders, must be insured of the public's coöperation and support. For many years, the mentally handicapped have had the sympathy of the public at large and the public has insisted that our standards of hospital care be improved. There is no doubt that if the public is properly informed and advised in regard to mental hygiene, we may rest assured of its support and much will be gained in the development of preventive mental medicine. This support, however, must be obtained in a manner open and above board and along lines of constructive building; not along the line of melodramatic presentations in the public press of our personal attainments or hospital achievements, such as have been resorted to in some communities.

What, then, should be the hospital's relationship to public education? The hospital may play a very important part in the matter of public education:

(a) By establishing a close relationship between the hospital and the citizens in its district. This may be done by elimination of secretiveness, welcoming constructive criticism and enlightening the public as to the hospital's operations and its functions.

(b) By disseminating the knowledge it has gained for human betterment, to the medical profession, the nursing profession, and to social, civic, philanthropic, religious, political and student bodies. This may be accomplished by providing trained psychiatric workers for presentation of psychiatric data before such bodies; by the publication of mental health bulletins, written in lay style and dealing with the prevention and treatment of mental disorder; and last but not least, through its mental clinics in the field, which make available a community center, where those who are in financial distress and unable to provide expert medical service otherwise, may go to consult with experts on matters which are of vital importance to themselves or their families and to the community at large.

In conclusion, a hospital for mental diseases, to fulfill its functions, must possess:

1. Physical structure, scientific equipment and the requisites for efficient and unhampered administration, namely, a medical staff, a nursing and hospital personnel representing the last word in progressive scientific mental medicine and hospital administration.

2. It must no longer serve the community apart from it, but rather as a part of it. It must possess a broad vision, one which comprehends the hospital not as an individual unit alone, but as a spoke in the great wheel of mental health and preventive medicine, adding positive constructive contributions to the understanding and treatment of mental diseases and thus becoming a vital, dynamic force in community, state and national life.

DISCUSSION

Dr. Theodore Diller (Pittsburgh): I am allowed five minutes, I understand. But I devoted ten hours yesterday to preparing myself for this five minutes' discussion, having spent the day at Danville, at the hospital of which Dr. Jackson is the head. It was with great pleasure that I revisited this place, my Alma Mater, I may say. Years ago, many years ago—I don't like to tell the years exactly to discover my age to this old friend (Dr. Estes) and others— I was a resident physician in this place, and I note great changes, progressive movements of all sorts, many of them along the lines which are indicated by Dr. Jackson in his paper. Although it may be ungracious to say so, having accepted the doctor's hospitality, I am somewhat disappointed in his paper. It would have been better for us had he treated the subject more in a concrete way and told what they are doing at Danville. The forward movements at Danville are in line with the Doctor's paper, and I dare say that it was simply modesty that prevented him from going into these things fully. We all know him to be a very modest man and the last man to blow his own horn or to seek to do so.

The program that has been laid out by Dr. Jackson is a very large one. It is one that is going to take years and years to work out.

I can give only two or three thoughts or impressions. Many of the things that he has stated are things to be worked out by our general Board of Welfare, the Department of Mental Hygiene. This is a new department, as you know, and we do not know how it is going to work out. I wish Dr. Baldy were here to tell us and that Dr. Sandy, who is Director of Mental Health, were here also. We are told we must bring the hospital into relationship to the public and to the profession. They are doing that at Danville; and they have clinics there, the laboratories are developing, social service is developing, and physicians are teaching the public and the profession something about mental diseases and their prevention.

So far as possible acute mental diseases should be treated in general hospitals. We have a few psychopathic wards in connection with general hospitals and that is going to do more than anything else to teach that a man sick, who shows mental symptoms, is a sick man. We have thought for generations that mental disease is not a disgrace and affects the public not at all. And another thing, you can't get the dear public to take an interest in mental disease unless John or May or Sue is sick. They all want to run away from it as they would from an undertaker. You cannot teach those who won't listen. Let us, the profession in general, take more of an interest in this subject and let it be considered rather a disgrace for an able-bodied, intelligent physician to shut his eyes and say: "I know nothing about mental diseases; they do not interest me." That is a selfish attitude, and I hope that attitude on the part of the profession will obtain no longer.

The subject of mental disease is one which should deeply interest the whole medical profession and the general public as well. Dr. Jackson is to be highly commended for endeavoring to make his institution more generally useful to the public.

Dr. C. C. Wholey (Pittsburgh): I did not come prepared to discuss this paper. However, certain thoughts regarding the subject have arisen in my mind during the reading of the paper and its discussion by Dr. Diller which urge me to say a few words.

At the outset I must differ with Dr. Diller's criticism of Dr. Jackson's presentation of the problems connected with the psychiatric hospital and its relationship to the community. I think that Dr. Jackson has pointed out in about the only way in which it is possible to do so the problems arising in connection with a mental clinic and the ways for dealing with these problems. He has called attention to the intimate relationship which exists between a mental hospital and the community. He has indicated that the day has passed when such a hospital can exist as an isolated resort to which patients might be sent and then forgotten about.

The psychiatric hospital constitutes about the best index with which I am familiar for checking up the various problems connected with a community. The mental diseases of its inmates can practically all be traced to the results of disease, or to unfavorable economic or social conditions, all of which could be alleviated or remedied. And Dr. Jackson has presented us with a practical program for attaining such a goal. The work which has been done in this connection has already reaped a reward. This is shown in the fact that the general profession has become much more intimately acquainted with what is going on in hospitals for mental diseases and with the great significance of these hospitals to the community. They now know much better than ever before that the patients are sick mentally and that their illness is often an expression of bodily disease which could have been obviated. Again, they know it simply represents a break-down in the mental machinery of the individual because of his incapacity to cope successfully with some life problem, which also need not have had such disastrous results if community and doctor alike had known the relationships which Dr. Jackson's paper points out.

Probably the most important purpose which the mental clinic may subserve is the aiding in the solution of the many vexing medicolegal problems which arise, especially in connection with the so-called borderline types of mental imbalance. Legislative measures having to do with the mentally sick will be revised and simplified only after the community and profession have attained a more comprehensive knowledge of the whole question and have learned to look upon mental aberration as merely one of the many expressions of disease and unwholesome economic and social conditions with which we are familiar. One of the most urgent needs in this connection is the utilization of expert medical testimony in such a way that its great value may be diverted in the direction of constructive legislation and the better accomplishment of justice rather than having it dissipated and neutralized and actually reflecting discredit upon the whole medical profession as is now so often the case under the present methods of handling such testimony.

I trust I may have misunderstood Dr. Diller and that his remarks were less harsh and more apropos than was my impression while listening to his discussion.

Dr. Horace V. Pike (in closing): In closing this discussion I should like to answer Dr. Diller's queries by emphasizing the fact that our conception of the relationship that should exist between the mental hospital and the community has been based on a study of both municipal and state hospital administration as regards community service activities over a long period of years and the principles that we have laid down in this presentation represent a summing up of the concrete results of the work that has been done by the Danville State Hospital during the past two years. Our hospital is really a rural hospital, for the community which we serve consists of twelve counties with an area of 9,170 square miles and a population of 873,000 people; and yet, in spite of the large territory which we have to cover, we have in the last two years established very definite relationships with the community at large. During the past twelve months we have established three mental health clinics at accessible centers throughout our hospital district, and another is to be organized within the next week. At these four clinics we have seen over three hundred individual cases of mental disorder and mental defect and these cases have come to us representing problems of the schools, the courts, the social service agencies throughout the community, while a great many have come referred by the physicians, who are taking an active interest in the work. We are likewise trying to do some university extension and postgraduate work; and to this end, four neuropsychiatric clinics are being held at the hospital each year. These are being largely attended by the physicians of the community, to whom we are able to extend information as to the newer and better methods that may be employed in the early recognition and treatment of mental diseases.

We are likewise endeavoring to increase the efficiency of the teachers of our public schools by instruction in matters pertaining to mental health. At the State Normal School at Bloomsburg, there has been incorporated in the curriculum a course in abnormal psychology and mental hygiene, and at the summer session this year 550 licensed teachers from all parts of the State of Pennsylvania listened to our course of lectures on this subject. At the Geisinger Memorial Hospital, we are furnishing a course on psychology and mental nursing and thus endeavoring to give the nurses who are going out into general work some idea of mental diseases. For the education of the general public a quarterly mental health bulletin is being issued, which, in addition to articles prepared especially for the lay reader, contains presentations tending to be of help to the general practicing physician.

A very important part of the community service work is that in relation to the patients suffering with chronic mental disorder. Since the opening of our clinics, we have been enabled to furlough to their homes a larger number of patients than heretofore, and it is interesting to note that during the past year only four cases of all that we have furloughed to the supervision of our clinics have had to be returned to the hospital. Two of these were cases of paresis and the other two had been furloughed on the insistence of relatives and against the advice of our medical staff.

The citizens of the community are definitely showing their appreciation of this work and at one of our clinics the community has furnished a full-time psychiatric nurse for the exclusive work of the mental health clinic.

I am sure it can be seen from this very brief presentation that we have established definite relations with our hospital community; and if this can be done in a rural hospital we are convinced that in an institution with an urban population no difficulty whatever should be experienced. In view of the coöperation that we have received and the results that we have attained, we have no hesitancy in making the statement that the establishment of definite relations between a hospital for mental diseases and the community is a definite step in advance in mental medicine.

ANTHRAX*

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Anthrax is the most widely spread of all the known diseases, and perhaps has been one of the best known of all the diseases since the history of man. Hippocrates,[1] living 460-370 B. C., recognized anthrax occurring as an epidemic, while Galen[2] spoke of it as always dangerous and the product of "bad humors." We would now reverse this and say that it rather causes "bad humors."

The anthrax bacillus was first described by Davaine,[3] working with the organism during the years 1850-65. In 1871 Klebs[4] showed that the virus was nonfilterable; while it remained for Koch,[5] while engaged in practice in the rugged country about Wollstein,[6] whither he had gone after the Franco-Prussian War, to work out the life history of the organism and to show its relation to the disease anthrax, demonstrating his findings before that brilliant assemblage at Breslau[7] in the presence of Cohn, Weigert, Auerbach, Traube, Conheim and our own Welch, all notables in the history of medicine.

Anthrax is a disease primarily of animals, occurring in frequency in the following order: cattle, sheep, horses and hogs. It is refractory in the cold-blooded animals, birds and dogs unless infected through ingestion of anthrax-infested flesh. It is especially fatal in the laboratory animals, including mice, guinea pigs, rats and rabbits. It is worst in Siberia, Asia Minor, China, Persia, Russia, and Italy, and in the United States in the Mississippi Valley and the states of New York, Pennsylvania, Massachusetts and Delaware.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

In man, the disease was formerly an occupational one, occurring largely in butchers and the workers with hides, hair or wool. But more recently it has been spread through infected cheap shaving brushes made from horsehair, and by flies or by the ingestion of meat or milk of diseased animals.

The initial lesion develops at the site of entrance of the anthrax bacillus through a skin abrasion, a malignant pustule developing in one to three days, or at the longest ten days. There first develops itching, then a papule surmounted by a vesicle and surrounded by an area of inflammation. The localized cutaneous lesion of anthrax, when fully developed, presents an appearance scarcely to be mistaken for that of any other disease. It is an ugly affair to look upon, painless, and possessed of vicious potentialities. It is characterized by a dirty brownish eschar, scattered over and surrounding which are numerous pinhead-sized silvery vesicles, the whole set in the midst of an area of swelling which may remain within moderate bounds or assume such enormous proportions that, when the pustule is situated on the face or neck, the eyelids are closed and the tissues of the upper part of the chest are thrown into large edematous folds. The swelling is due to the presence of a semigelatinous substance, anthracomucin, which is inimical to the growth of the anthrax bacillus and which represents, therefore, a defense reaction on the part of the tissues, and should be let alone.

There may be a gradual healing of the ulcer, together with a retrogression of the edema, or there may be a dissemination of the infection through the blood stream, accompanied possibly by chill, malaise, headache, anorexia, nausea, vomiting, indefinite aching pains and progressive weakness. The temperature is usually at first 100-103, and later subnormal, the pulse progressively more rapid and unsteady. If the gastro-intestinal tract is more particularly involved there is associated considerable abdominal pain with an intractable bloody diarrhea. This form is often called "Mycosis Intestinalis" or "Splenic Fever" because of the associated enlarged spleen. If the respiratory tract is more especially involved there is more or less dyspnea, cough, nonproductive or productive, with a bloody sputum from which the bacilli may be isolated. This has been termed the "Wool Sorters'" or "Rag Pickers'" disease. Or the meninges may be involved, with definite symptoms and signs of a meningitis. In the severe cases all of the above symptoms and signs are present, with shock, collapse and death occurring in rapid order unless a prompt diagnosis is made and the appropriate treatment administered.

The diagnosis can usually be made through a careful history which will usually reveal that the patient has been in contact with infected animals or animal products, or has used a new, cheap shaving brush. Also the lesion is a fairly constant one and the typical organism can be recovered from the vesicles surrounding the ulcer or, in the internal type presenting no external lesion, from blood culture, sputum or the bloody stool.

The diagnosis having been made, the seriousness of the case demands the most efficient treatment promptly applied. To quote from Regan,[9] such a treatment should: "(1) be applicable to the various forms and locations of the disease; (2) have the lowest mortality rate; (3) be as specific as possible; (4) possess no danger of generalizing the local infection; (5) offer the least amount of scarring and deformity; (6) cause a minimum of pain; (7) entail the shortest absence from employment."

Statistics are overwhelmingly in favor of antianthrax serum locally and intravenously, without incision or excision of the malignant pustule, as fulfilling these requisites. Marchoux of France was the first to develop the serum, followed closely by Sclavo in Italy, and later by Eichorn of the United States Bureau of Animal Industry.

It is not within the scope of this paper to detail the various treatments in vogue even to-day in spite of the proven superiority of antianthrax serum. Suffice it to say that the many treatments suggested prove by their number that none are satisfactory. Attesting the superiority of the above suggested treatment, the following statistics are offered: Ogilvie and Hall,[10] reporting 800 cases in the *British Medical Journal,* showed a mortality of 4% in those treated by serum only as compared with 12½% in those treated otherwise, and 48% in those receiving no treatment. In 1903, Sclavo[11] reported 164 cases treated by serum, with a mortality of 6%, as compared with 24% in those cases not receiving serum treatment. Mendez[12] reported 1,073 cases treated with serum, with a death rate of 4.19%, while Cicognani[13] in 1901 reported that in the town of Santa Croce, Italy, where there were 36 tanneries, the results from serum treatment were so far superior to any other that the workers themselves insisted upon that treatment to the exclusion of any other, presenting themselves for treatment as the smallest pimple suggestive of anthrax appeared.

Regan[9] gives the following explicit directions for serum treatment: All cases receive injections of serum locally by injecting 2 to 3 c.c. in each of three or four places equidistant from each other in the red indurated border beyond the blanched zone in such a manner as entirely to circumscribe the lesion. This furnishes serum at the place where the bacilli are so numerous and increases phagocytosis. Injections are made every eight to twelve hours for four to six injections, depending upon the severity of the lesion. In addition to the above, the mild cases receive four to six intravenous injections of 50 c.c. each, every six to eight hours. In the moderate cases, six to eight intravenous injections of 50 to 80 c.c. are given every six to eight hours. In the severe cases without anthrax septicemia, 100 c.c. are given every six hours for four injections or until the disease is controlled, when the dose is reduced to 50 c.c. and administered every twelve hours. In the septicemic cases with positive blood culture, which are the most fatal variety, 100-150 c.c. are given intravenously every three hours until the septicemia is checked.

It seems strange that after Sclavo and Mendez worked out the specific serum treatment 20 years ago with such convincing statistics, the medical profession should be so slow in adopting it. In an editorial in the *Journal of the American Medical Association,* appearing in Vol. 79, No. 1, p. 43, of this year, we have the excision of the local lesion and the injection of phenol in the surrounding area recommended. It would appear that perhaps the medical profession as a whole is not aware of the excellent work which has been done in developing the antianthrax serum, or that the serum is not always available. In a disease of such rapid advance after the onset, and with such a high mortality after any other treatment, it would appear that the serum should be kept in stock in every industrial center and in every center of population, and its distributing center widely advertised, so that it may be available in the shortest time, as is diphtheria antitoxin. Statistics show that it is as reprehensible to treat anthrax without serum as it would be to treat diphtheria without diphtheria antitoxin. Fortunately Eichorn, formerly chief of the Bureau of Animal Industry in Washington, has developed a serum in this country which is as potent, if not more so, as that developed originally by Sclavo; and it is now manufactured by numerous pharmaceutical houses.

Preventive medicine is the highest calling in the practice of medicine. Measures to treat the disease most effectively have been outlined above. How much better it would be to prevent the incidence of the disease! To force the issue, Smyth and Bricker,[14] in a statistical study of tanneries in Pennsylvania, found that 8% of the employees, or a little over a 1,000 men, were exposed to anthrax. Of these, 119 contracted the disease, with a mortality of 20%. What is indicated? Stop the disease at its source!

Meat carcasses are carefully inspected as per regulation, and all infected carcasses are incinerated and the killing bed and instruments properly disinfected.[15]

Industrial workers in hides, hair and wool should be protected by strict hygienic measures under federal control as is done, for instance, for workers in the presence of dangerous fumes such as phosphorus. These measures should include rooms for removal of street clothes, bath and scrub rooms through which the worker should pass to put on his work clothes. On leaving his work the employee should remove his work clothes, thoroughly cleanse his hands, face, and exposed parts with soap and hot water in the middle rooms, and dry himself with individual paper towels and pass on to the outer room to dress in his street clothes. Especial attention should be paid to keeping finger nails scrupulously clean, while all abrasions of any exposed parts of the body should be appropriately covered. Wherever practical, rubber gloves should be worn and the face and neck should be protected by a suitable mask, especially in wool sorting establishments where the danger of contracting pulmonary anthrax is the greatest. The walls and floors of work rooms, together with all contained benches and equipment, should be frequently cleansed with soap and water. Finally, notices should be placed prominently in all such factories outlining the first signs of infection (namely) the appearance of a pimple or sore) and commanding the employee to report at once to the dressing station for an injection of antianthrax serum as above outlined.

Hides, skins, wool and horsehair are supposed to come into this country under strict quarantine regulations unless accompanied by a consular certificate to the effect that they are from an anthrax-free district or bear a stamp that they have been suitably sterilized. These certificates offer a false sense of security to those handling the material. England[16] is meeting the situation through disinfecting stations at the ports of entry. The material passes first through long vats of an alkaline soap solution maintained at 102° F. for 30 minutes for three stages of ten minutes each, and secondly through vats of 2 to 2½% formaldehyde solution at 102° F. for 20 minutes in two stages of ten minutes each. It is then dried, cooled, and baled for consignment, the entire procedure being done automatically by machinery.

The prevention of anthrax from shaving brushes would at first thought appear simple. In spite of all the many regulations existing with reference to the importation of possibly anthrax-infested hair, anthrax from shaving brushes is becoming more common. Perhaps the question arises, why is one not infected from tooth or hair brushes? The latter are made from hog bristles picked from live animals or those freshly killed, or from wood fibre; while in every instance where one was infected from a shaving brush it was found to be made from horsehair. To meet this contingency there is a bill[17] now before Congress making it unlawful to import into the United States any shaving or lather brush containing horse hair, or to ship the same from one state or territory to another within the United States. This has been before Congress two years but has not as yet been reported out of committee.

There are in the United States some twenty-odd manufacturers of shaving brushes. Colonel F. F. Russell,[18] investigating the question of anthrax infection from shaving brushes, found that some of these manufacturers sterilized their brushes well, while others did not at all. Further, owing to the isolation of Russia and trade conditions existing there, the supply of badger hair from which the best brushes are made, has been cut off. Instead, they are now making an excellent imitation badger hair brush from horsehair by electricity, thus increasing the danger of infection from all types of brushes, the expensive as well as the cheap. Further investigation showed that there is no way of identifying the manufacturer of most brushes on the market, as no distinguishing mark appears on them.

In order to meet all possible dangers of infection, all hair entering into the manufacture of shaving brushes should be thoroughly washed and sterilized by the individual manufacturer of the brushes before use in some such manner as now used at the ports of entry by England as above outlined, or by soaking it in full strength peroxide of hydrogen, or by soaking it in a concentrated Dakin's solution, both of which have been shown by Bruecken[19] to be the most efficient means of destroying both the anthrax bacillus and its spores, and which can be made so easily and cheaply from some of the new and nonofficial preparations now recognized by the American Medical Association. Each manufacturer should clearly stamp his own product by a distinguishing trade name or mark, permitting the tracing of any brush purchased in the open market. Further, accompanying each brush there should be a printed slip stating that it should be soaked in peroxide of hydrogen full strength or in the above concentrated Dakin's solution for four hours or over night, the brush being agitated from time to time.

The case herewith reported was that of a young forge man in a steel mill, aged 21, who was admitted to St. Francis Hospital, March 22, 1922, complaining of swelling of neck and pain over the kidneys. About a week before admission there appeared under his chin a small pimple about the size of a pin head. Four days later it had grown to the size of a split pea, when it began to enlarge rapidly, and the surrounding skin became red and indurated. The lesion was not painful but was tender to touch. Two days before admission, pain appeared in the lumbar region and grew progressively worse so that he could not lie long on either side. The day before admission he began to vomit, the vomitus containing blood, and there was also a bloody diarrhea.

Examination showed the young man to be extremely weak and bathed in a cold perspiration. The eyelids were puffy and somewhat cyanotic. There was an immense swelling of the neck extending from one angle of the jaw to the other, while in the midline there was a lesion 2.5 cm. broad, 1.5 cm. in length, having a yellowish depressed center and an elevated surrounding area surmounted by numerous tiny vesicles. The patient was pulseless, heart action was rapid, 135, weak, and there were a number of scattered râles in each lung, more posteriorly. The patient was tender over the lumbar region on either side. All reflexes were sluggish.

Anthrax was suspected, so a direct smear was made from the vesicles surrounding the lesion, which showed many anthrax bacilli. An attempt was made to obtain some antianthrax serum, but none was to be found in the city. The patient became unconscious two hours later and died seven hours after admission.

Autopsy showed "malignant pustule" of neck, anthracemia, pneumococcemia, anthrax meningitis, hemorrhagic ulceration of stomach and intestines, serous peritonitis, hemorrhagic lymphadenitis, acute splenitis, acute bronchitis, and numerous other findings not associated with anthrax.

Inquiry from the family showed that he had purchased a new shaving brush shortly before he noticed the "pimple" on his chin. When the family physician informed the family of the cause of death, they, horrified, threw the brush away so that when an attempt was made to obtain it to complete the chain of evidence, it could not be found. However, the shaving mug contained anthrax bacilli and several shaving brushes of the same quality purchased from the same peddler showed anthrax bacilli.

AUTOPSY

A. J. BRUECKEN, M.D.*

About 1 cm. anterior to the submaxillary-cervical angle, where there was a distinct, deep furrow, there was found in the exact midline a somewhat oval, slightly raised area resembling an ordinary herpes at first sight. This area measured 2.5 cm. in breadth and 1.5 cm. in the anteroposterior diameter. It showed a livid periphery with a dry, somewhat yellowish crusted, large center. The livid area was somewhat elevated and indurated, while the center was depressed, dry and crust-like. The neck showed marked edema and enlargement, so that at the angles of the jaw there was a marked protuberance which was somewhat like that of mumps, though it did not extend high enough behind the ear on the left side. On the right side it was not unlike mumps. On touching it, there was a shivery vibration like that of edematous tissue. The submaxillary and submental regions also bulged, so that it appeared as if the individual were rather fatty in this region. The chest was of good shape. The axillary lymphnodes were palpable and seemed somewhat enlarged, though the tissue was rather thick in this region. The inguinal nodes were readily palpable and rather large. The epitrochlear nodes were not palpable.

Neck Organs: The esophagus was thin walled. Although it showed no edema in the neck, the wall showed much surrounding edema in the rest of its course and became distinctly thickened. The edema was chiefly about the esophagus. The mucosa appeared pale and healthy.

The trachea was filled with a greenish, yellow, purulent material. It was reddened throughout but showed no evidence of ulceration. The vocal chords were thick, but the larynx showed no obstruction. There was no evidence of edema of the vocal chords. The deeper fascial tissue of the neck showed definite gelatinous edema, but this did not appear very intense and the edema was chiefly confined to the subcutaneous tissue. The muscles were dark red and somewhat edematous, but not intensely so. The cervical lymphnodes showed some enlargement and intense congestion. The thyroid gland did not appear enlarged. It measured, in situ, 6.2x4.3 cm. and its greatest thickness was 1.8 cm. The organ appeared pale, uniform and showed a narrow isthmus. Its capsule was well defined. There was no evidence of suppuration of the neck. The larynx was not particularly reddened, but the epiglottis showed considerable reddening, though it was not in the least swollen.

The T. B. L. N. resembled those in the mesentery but they were not quite so hemorrhagic. They were much enlarged, soft, and red, but on section they showed curious, sharply defined, prominent, white granules of very small size which may have represented follicles in the congested pulp. Anthracosis was not easily made out in these dark red nodes. There were no areas of calcification. One node was so hemorrhagic and soft that it almost spread out as a soft jelly.

Thorax: On opening the thorax, the lungs seemed to be extremely small in the chest cavity and there was no free fluid in the pleural sacs. The pericardium contained about 20 to 25 c.c. of a slightly cloudy fluid which was rather thick in character. There was no evidence of pericardial thickening. The apex of the heart was 9 cm. to left; right border 3.5 cm. to right. The lungs were perfectly free, light, and there were no adhesions.

Left Lung: Weight 200 grams. The lung was very small, felt rather firm and was of a light gray-pink color. There was only moderate anthracotic stippling which was most marked in the upper lobe and showed a costal distribution. The lung showed absolutely no evidence of consolidation. The tissue appeared quite uniform throughout. The oblique fissure anteriorly was closed by fibrous adhesions. The bronchi showed intense reddening, but there was no marked exudate except a little blood tinged mucus. The lymphnodes at the root of the lung were only slightly enlarged, moderately anthracotic and the hilus tissue was slightly edematous.

Right Lung: Weight 210 grams. The oblique fissure in the anterior portion of the right lung also was crossed by a number of adhesions and the same was true of the transverse fissure. This lung was much like the left lung. It showed some pinkish lividity but no evidence of consolidation. On section, the lung in general presented characters much like those of the left organ. The bronchi showed the same reddening. The lymphnodes at the root of the lung were not enlarged.

Heart: Weight 220 grams. Measured 12x9x5.5 cm. The heart was firmly contracted and the right ventricle contained a little thick, dark red fluid blood. There were no P. M. clots. The myocardium was firm and of a healthy, reddish, dark brown color. T. O. 11; P. O. 6.5; M. O. 9.5; A. O. 5.8 cm. R. V. .8, and L. V. 2 cm. F. O. was closed. The subepicardial fat was fairly abundant. The valves of the heart were smooth, glistening and quite healthy looking. The myocardium showed a somewhat lighter color in places, but for the most part was uniform. It showed no evidence of cloudy swelling save in the lighter areas. The tissue was not flabby. Sometimes dark red areas suggested slight diffuse hemorrhages, but no frank hemorrhages were noted. The semilunar valves showed moderate fenestration. There were no vegetations on the heart valves. The root of the aorta showed extremely little evidence of fatty streaking. This was most marked in the sinuses of Valsalva. The coronary arteries, however, showed a few rare fatty streaks. There were no thrombi in the appendices of the auricles.

Aorta: The aorta was of unusually small caliber. It was quite elastic and thin-walled. It showed moderate fatty streaking. The lymphnodes along the entire course of the aorta were found to be like those described in the mesentery. The condition was most marked in the retroperitoneum. Here there was, in addition, marked edema. The nodules could not be differentiated from nodules of blood clot in most instances. The thickening of the retroperitoneal tissues over the anterior aspect of the spine was the marked feature on opening the abdomen.

Abdomen: On opening the abdomen over the bladder region, there was an enormous amount of gelatinous edema which apparently was a part of the extreme edema of the subperitoneal tissues, especially in the retroperitoneum. At least 500 c.c. of a slightly cloudy, thick, serous fluid was found in the peritoneal cavity. The small intestine appeared greatly contracted and showed numerous large, dark red blotches with several localized, rounded or oval areas of overdistension of one side of the wall. Apparently these areas of overdistension were due to weakening of the wall by the ulceration apparently within; but when the bowel was opened, this distension seemed to be due to accumulation of blood. But the color was not due to blood showing through the wall since the wall was usually contracted and rather opaque and pale white, save where it showed the very dark red blotches. As a matter of fact, the intestines were filled with blood throughout their extent. But they nevertheless appeared unusually pale white in their contracted condition, save at the points noted. The appendix also appeared narrow and contracted, and was free. The most remarkable change was found in the mesentery, and this was most marked at its root. The mesentery with the retroperitoneum formed a hemorrhagic, edematous, glistening, quivering bed. But the peritoneal surfaces were clear and glistening and showed no fibrous exudate. The gall-bladder showed some fibrous adhesions to the G. O. The G. O. was not much in evidence. The M. L. N. seemed to be uniformly hemorrhagic and were distinctly enlarged and indurated. The intestinal border of the mesentery, for a distance of several centimeters, showed little or no change and was fairly fatty. The liver was not enlarged. The stomach was greatly contracted also. This extreme contraction of the gastro-intestinal tract throughout was a characteristic condition. The kidneys were imbedded in edematous, loose, very tough tissue. There was a small fibrous band of adhesion between the anterior surface of the liver and the diaphragm.

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Stomach: The stomach was quite small with thick walls. It contained an ounce or more of dark red, almost black, blood. The rugæ were very prominent throughout. On washing away the blood, the mucosa was found to be markedly reddened, but there was no definite bleeding point discovered. No blood was found in the esophagus. The mucosa was well mammillated in the pyloric region. The contraction of the stomach was like that of the S. I. in most places. The pylorus was not relatively thick. Close inspection of the mucosa of the stomach showed numerous linear ulcerations throughout. These were often branched in arborescent fashion. These ulcerations were present throughout the fundus, but were not seen in the pyloric region. Many small, punctate ulcerations were also seen, and it was apparently these which caused the bleeding. In the pyloric region, some soft tenacious mucus was adherent to the mucosal surface and when this was scraped away some small areas of ulceration and hemorrhage were noted.

Small Intestine: The duodenum showed some bloody areas on its mucosa. It was of moderate diameter. Externally some indistinct blotches of dark red color could be seen. The jejunum was somewhat larger and somewhat distended in the upper portion, but lower down it became quite contracted. It showed numerous dark red blotches, sometimes several centimeters in diameter, on its serosal surface, and at some of these there was marked bulging of the bowel wall as if it were weakened at these points. The large intestine was also contracted, save for a slight localized distension of the T. C. The cecum was of dark red color externally and was slightly distended. The bowel throughout appeared much contracted like the stomach. The duodenum contained only a little blood, but the upper part of the jejunum was filled with it, and this is the reason it was slightly more distended than the rest. The blood was somewhat viscid, dark red and clotted. It was very difficult to separate the blood from the mucosal surface. After washing away the blood, the mucosa showed somewhat reddish gray areas which represent the blotches seen on the outside. The bowel wall felt thick and edematous as well as heavy. Some of the blotches were dark red and formed small ulcerations from several millimeters to one or two centimeters in diameter. These areas formed small ulcerations from which recent hemorrhage had taken place. There was no food material in the small intestine. There was blood from one end to the other. In the upper portion of the ileum, at the greatest localized bulging of the bowel wall, there was found on the mucosal surface a livid area the center of which appeared of a pinkish gray, soft, shaggy nature. When this material was removed, a rather deep ulcer with firm and ragged edges was revealed.

Large Intestine: The large intestine also contained dark red, more or less mucoid blood throughout. In the rectum, this became of a firm, glassy, tarry nature. The large bowel did not show the external blotches that were seen in the small bowel. When the blood was washed away, however, the mucosa showed definite reddish blotches here and there, but this was only in the cecum and ascending colon. In the rectum, there was only a little tarry material somewhat resembling the fecal material of small, herbiverous animals. The rectum showed a rather clear mucosa which was only slightly reddened.

Mesentery: The mesentery of the small intestine showed a remarkable thickening towards its attachment. It was about 4 cm. thick and showed numerous large nodules of a very dark red color. Some of these seemed to become confluent to form a large mass about 7x4.5x3 cm. This apparently was a hemorrhagic mass and felt indurated and still soft and nodular in places. The softness was due to the intense surrounding gelatinous edema and uncoagulated blood which became decidedly less marked after removal from the body. The veins and arteries were clear, and the masses resembled hemorrhagic lymphnodes. On section, the nodes, which measured on an average 1 to 1.5 cm. in diameter, presented simply a dark red, blood-clot-like appearance. Nothing else could be made out in them. Other areas in them resembled either persistent fibrous tissue or lymphoid tissue. The same condition was found in the retroperitoneum and especially between the kidneys. Here there were hemorrhagic masses, several centimeters in diameter. They were dark red in color and when cut, much dark red blood oozed away. Much edema was found about the kidneys. It appeared of a gelatinous, amber color.

Appendix: Measured 9.5 cm. in length, and showed a fairly uniform diameter of 6 mm. The lumen was filled with blackish-red, bloody material, but it was not markedly distended. There was no evidence of ulceration of the mucosa, such as was found in the small bowel; but in the distal third, two small areas 2 or 3 mm. in diameter, seemed to show superficial ulceration and were quite red. The wall was thin and fairly soft.

Liver: Weight 1110 grams. Measured 24x14.5x6.8 cm. The liver presented a curious, finely wrinkled surface. It was of a livid, pinkish brown color and the capsule appeared cloudy. The organ was rather flabby and, when lifted, fell over the hand in the form of a rag. On section, the cut edge did not evert much. There was an adhesion over the anterior aspect of the liver near the midportion, to the right of the falciform ligament. The lobules were fairly well defined, and the tissue appeared uniform. There was no evidence of necrosis. The lower edge was very sharp. Much dark red blood oozed from the cut surface, which was glassy. There was no evidence of edema in the form of dripping fluid, but the glassiness and the tendency of the tissue to swell more about the blood vessels than the cut edge were indicative of a serous infiltration.

Pancreas: Weight 70 grams. Measured 21.5x4.5x1.5 cm. The organ was firm but soft, and showed a well lobulated, pinkish-yellow structure which appeared quite uniform. The ducts were clear but the stroma presented definite edema. In places considerable moisture could be expressed. The loose tissue about the pancreas was hemorrhagic and edematous.

Spleen: Weight 280 grams. Measured 15.8x10x4 cm. The spleen was of a livid, grayish-pink color. It was bound firmly in its posterior portion to the abdominal wall, and was extremely flabby and soft. On section, it showed abundant, large, prominent, irregular malpighian corpuscles. The tissue, however, was not diffluent although extremely flabby. The stroma could not be made out. The tissue was smeary on the cut surface but rather firm, though it could be crushed readily with the finger. Closer examination showed in some areas that what appeared to be large malpighian corpuscles were really areas of myeloid, dull, opaque, gray tissue resembling infarction.

Kidneys and adrenals, and genito-urinary tract throughout showed no gross evidence of anthrax infection.

Lumbar Puncture: The cerebrospinal fluid was under markedly increased tension and appeared quite bloody. While the blood was in rather large amount in the fluid and caused a distinct red color, there was a definite dark red appearance with an added gray clouding which is not seen in ordinary accidental blood admixture produced by lumbar puncture. On standing for 2 or 3 hours a remarkable characteristic appearance was noted. The blood settled to the bottom in a compact dark red mass. Above this and extending through the greater depth of the column of fluid, a decided gray clouding which decreased in capacity from below upward was at once interpreted as pus cells settling out, especially since the uppermost portion of the fluid was clearing up so that it appeared perfectly clear and colorless in comparison. Smears, however, showed no pus cells in this extensive cloudy zone, there were instead myriads of typical anthrax bacilli and not a single cell could be found. In 15 hours the appearance was practically identical.

Blood Smear: The large Gram positive rods were readily found in smears of heart's blood.

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DISCUSSION

DR. ALBERT J. BRUECKEN (Pittsburgh): The autopsy in this case showed both the cutaneous and intestinal forms of anthrax, with an intense anthrax meningitis. There was a cutaneous lesion in the submaxillary region of the neck resembling a dried herpes lesion and a very severe hemorrhagic ulceration of the small intestine. Associated with these regions there was an intense glassy edema—a gelatinous quivering tissue—the typical anthrax edema. In addition the entire gastro-intestinal tract was filled with blood, tarry in the lower portions and extremely tenacious, while the mesenteric lymphnodes formed large balls of what seemed to be almost pure coagulated blood embedded in the boggy tissue. The cerebrospinal fluid was extremely cloudy and loaded with anthrax bacilli and some blood. The blood rapidly settled out, leaving a very cloudy fluid, due, as was shown by smears, to nothing but anthrax bacilli in heavy emulsion. The hemorrhagic condition of the fluid is characteristic of anthrax meningitis. That in short was the picture.

Curiously, in addition to the massive anthracemia, there was also found a definite pneumococcemia. It seems that the anthracemia and severe melena, which occasioned a great loss of blood, were not sufficient to kill this man. In fact we do not know what kills in anthrax. We think it is a mechanical clogging of the capillaries with hordes of anthrax bacilli forming emboli, since a toxin is not demonstrable. We had another case in an older man several months ago, with the same cutaneous lesion, and possibly from a shaving brush again, in which no pneumococcemia or other added infection was found with the anthracemia. This case did not show the extensive lesions of the present case. There was merely the local edema and well-marked anthracemia. But the pustule had been cut out! The cutaneous form is relatively not malignant. The mortality is about 5%.

Another interesting feature of this case was the combination of cutaneous and intestinal forms. He had no pneumonia, by the way. That is a curious thing, although he had a pneumococcemia and bronchitis. The question arises whether he swallowed bacilli from his sore in the neck and thus induced intestinal ulceration, which seems very probable, or whether the organisms showed a predilection for the intestines from the bloodstream.

We isolated anthrax bacilli not from his own brush—that is the main point; we isolated them from brushes purchased immediately after his death from the man who sold it to him. His mug and soap also showed B. anthracis.

A point to be remembered is the question of immunity. Apparently anthrax must be induced by injury; there must be a lesion produced, such as the traumatism so frequent in shaving, but in some animals the disease has been produced by merely rubbing the spores into the skin. You would be surprised to have seen the clumps of dirt and the myriads of bacteria in those new brushes when rubbed up in physiological saline solution.

The effect of disinfectants on anthrax bacilli: I was surprised at the great resistance of the spores. The hypochlorite, used four times stronger than Dakin's solution, kills in 7½ minutes, and this diluted 1-10 kills in 15 minutes; while solution of hydrogen peroxide (U. S. P.) kills in 2½ minutes.

You know that 5% carbolic acid does not kill them always in three months, and liquid phenol has very little power; it seems to preserve them, in fact, when compared to the disinfectants mentioned.

The hypochlorite undiluted ruins the brush, while the solution of hydrogen peroxide does not. Shaving creams requiring no brush are suggested. When purchasing a brush obtain at the same time a bottle of "peroxide" and soak and immerse the brush in it overnight. It may cause slight bleaching.

Dr. Albert E. Roussel (Philadelphia): Two years ago I had two cases of anthrax under observation. One was removed to the Howard Hospital; he died six hours after admission. Both of them had malignant pustules. The second case was at the Polyclinic Hospital. The diagnosis was made earlier, and after passing through a perilous condition, by the administration of large doses of serum he recovered.

The point I want to make is that before the use of serum and since the use of serum, in those countries where anthrax is more common and consequently where the general practitioner entertains more possibility of its occurrence in lesions of the face—I am speaking more especially of the cutaneous forms—the earlier the diagnosis is made (just as in diphtheria), the better results you get. If you commence the administration of serum in these cases that have been under observation three or four or five days, your results are materially different, and we should always bear in mind the possibility of a suspicious sore on the face as being a case of anthrax. In the one case of the man who died (a groceryman), he had also been using a recently purchased shaving brush. That shaving brush was destroyed and consequently we were unable to show the definite etiological factors.

Dr. Utley (in closing): Anthrax is far more prevalent than is commonly believed. It is probable that most of the cases of so-called insect bites which are followed by a pronounced edema and death, and which have been diagnosed as septicemia following an insect bite are in reality anthrax. Two such cases came to my attention during the past summer.

The point which Dr. Roussel has made is certainly only too true. If these cases are to be saved they must be diagnosed early, and then the appropriate treatment applied. It is for this reason that every industrial center and every center of population should at all times have a sufficient supply of serum at hand.

SYMPOSIUM ON BONES AND JOINTS

TUBERCULOSIS OF THE BONES AND JOINTS*

DeFOREST P. WILLARD, M.D.

PHILADELPHIA

It is fitting that the discussion of tuberculosis of the bones and joints be brought before the general session of this meeting rather than before one of the special sections since the study of these conditions is not confined to any group of specialists and since the best results are only to be obtained by the fullest coöperation between the medical and surgical branches of the profession. The large majority of these cases is first seen by pediatrist, internist or general practitioner, and it is only the exceptional case in which a specialist in the diseases of the bones and joints is called upon to make the diagnosis. The surgeon, therefore, must depend on the medical man for correct and early diagnosis, just as the physician may expect help from the surgeon in properly treating such a case. Fortunately the medical profession in this state is becoming more and more alive to the necessity of early recognition of tubercular lesions, and the orthopedic clinics are receiving fewer and fewer of those advanced cases which can never be fully restored to good physical function.

But even yet our profession is far from perfection in this respect, and such cases with marked deformity and long-standing symptoms still come to the hospitals. Only too often do we find that, before admission to the hospital, they have had prolonged and useless treatment for paralysis, "growing pains" or rheumatism. I might quote as examples case after case in which recognition of the disease has been delayed until the destruction of bone or joint had become so obvious that the diagnosis could be made even by a layman and in which permanent crippling or death must be the only outcome.

As it is the medical man on whom the responsibility of making the accurate diagnosis usually falls, to him, therefore, must be emphasized the necessity of diagnosis in the predeformity stage. If such diagnosis is made before the joint destruction occurs, proper treatment gives every chance of obtaining a useful, functioning joint. On the other hand, if bony destruction has advanced, no amount of skill can fully restore the diseased joint, and some degree of permanent crippling must occur. In proof of this, I requote the figures obtained a few years ago, by a study of 200 cases at the University Hospital. Of the cases in which treatment was begun within three months of the onset of symptoms, 80% were quiescent at the end of five years and there were no deaths. Among those that received no treatment for one year after onset of symptoms, only 38% were quiescent at the end of five years and there had been a mortality of 11%. In this same series, 71% of the cases showed good functional results when treatment was started within three months of onset and only 10% showed even fair ultimate function when treatment began over one year after onset.

In this early diagnosis the x-ray is of little value as it is only after considerable bony destruction has occurred that the x-ray reveals the lesion. Careful physical examination for signs of muscle spasm, muscle atrophy, limitation of joint motion, and joint tenderness with or without joint pain will give the clue to the condition long before the x-ray can show it. I believe that a tentative diagnosis of tuberculosis should be made in all children that show a low-grade progressive arthritis of one of the larger joints. It is far better to start suitable treatment early than to wait until the diagnosis is absolutely assured, and thereby lose the best chance of restoring function.

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* Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

The laboratory may aid in early diagnosis, but is only useful in conjunction with careful physical examination. The von Pirquet skin vaccine is a fairly reliable test in children and will usually show the distinctive erythema and swelling within 24 hours of its application in an active lesion. The subcutaneous injection of tuberculin (Koch) is, perhaps, even a better method if the child's temperature can be watched both before and after the injection. No reaction to tuberculin injection is valuable in confirming a diagnosis of nontuberculous lesion, while the positive temperature reactions mean that tuberculosis is present somewhere in the body, although not necessarily in the bones. In most clinics it is customary to make the Wassermann test to exclude the types of luetic arthritis that may also simulate tuberculosis. The temperature chart and examination of blood and urine are not diagnostic in early tuberculosis.

Tuberculosis of the more deeply placed joints, such as the spine and hip, is usually the type in which the diagnosis is not made in the predeformity stage. Our textbooks give us certain classical symptoms by which these conditions may be recognized after the disease is well established, but too little emphasis is placed on the early signs of such conditions. There are, however, certain objective symptoms that are recognizable, and on which at least a tentative diagnosis of tuberculosis can be made before the bony destruction has become marked. I can describe the symptoms of the early stages of spine and hip tuberculosis in no better way than by citing two cases which, in history and examination, are typical of the disease in these locations.

A child of six was referred to the clinic a few months ago. No history of injury was obtainable, but the mother stated that for several weeks the child had been irritable, had shown a marked disinclination to play, had complained of occasional acute attacks of pain in the upper abdomen and had frequently awakened from sleep complaining of pain without being able to localize it definitely. There had been no loss of weight and no recognizable rise in temperature. On examination, the child ran and walked fairly normally but was very reluctant to make any motion that would cause jarring of the spine. On bending forward, a careful examination showed an area in the lower dorsal region of perhaps five or six inches in which the normal spine motion did not occur and which remained rigid no matter in which direction the spine was bent. On palpation there seemed to be some tenderness of the spinal muscles in this area and this muscle area remained in spasm even when the other portions were relaxed. No knuckling of the spine was visible. The x-ray at that time was negative but the later studies proved up the diagnosis of tuberculosis of the tenth and eleventh dorsal vertebræ.

Tuberculosis of the hip may also be as vague and indefinite in its onset. Our records show the following picture of such a case: A girl of ten was brought to the clinic with no history of injury, but it had been noticed that during the previous four weeks she limped slightly after exercise or in the evenings. At first this limp occurred only after prolonged exercise or fatigue and disappeared after a night's rest. We were able to obtain nothing else of diagnostic importance from her history. At no time had she complained of pain. At the time of admission she distinctly favored the leg when walking or running. On examination she showed a slight limitation of flexion, abduction and extension of the left hip. The affected joint was more sensitive to pressure than the sound hip, and the thigh just below the affected hip was ¾ inch less in circumference than on the sound side. A diagnosis of tuberculosis was made on the intermittent limp, the slight limitation of motion, the slight sensitiveness of the joint, the early atrophy of the muscles and the lack of other subjective symptoms. This diagnosis was later proved. Again the x-ray was of no diagnostic value in this stage. Let me emphasize in both these cases the slow insidious onset, the lack of pain and other subjective symptoms.

Our knowledge of the pathology of bone tuberculosis has changed but little. The pathologic changes are mainly those of bone absorption. However, Allison has pointed out that bone tuberculosis is not purely destructive in character and that proliferative changes may occur during the disease. He states that in the cases studied all the lesions showed both bone destruction and bone proliferation. When cancellous bone was involved destruction predominated. When compact bone was involved proliferation predominated. He also states in his conclusions that he believes tuberculosis is primarily a disease of the bones, that it may involve any portion or tissue of the bony framework, but is most frequently localized in the ends of the bones and consequently involves joint structures.

It is not necessary to discuss in detail the treatment of tuberculosis of the bones. I only wish to mention certain changes and additions that have appeared in the past few years. Fixation of the affected area is still of the greatest importance. Not only must weight-bearing be stopped, but the affected joint and those adjacent to it must be immobilized if this part of the treatment is to be effective. The reports from many clinics overseas would seem to show that this form of treatment is not being emphasized as it was formerly and that it is used only to relieve pain and that they are depending on various methods to obtain a cure. However, absolute fixation of the diseased area either by rest in bed or by means of cast or apparatus still plays the most important rôle in the treatment of this condition. Operative methods of fixation are still considered valuable. The Hibbs and Albee spinal fixations have become a standard part of the treatment of caries of the spine and are of special value in adult cases. In children they may be said to be an addition to our older methods, but they are not to be considered as a cure in themselves and must be followed by a continuance of conservative treatment until the disease is quiescent. Calvé of Berc-sur-Mer believes that these ankylosing operations are useless in cases of early caries of the spine in children.

Whether operative or nonoperative methods of fixation are used, it is essential that the diseased area be thoroughly immobilized during the period of active pathologic change and that the joint be adequately protected from injury or strain for several years after the symptoms have disappeared.

In what may be called the nonsurgical side of treatment much of interest has been brought out and is applicable, in great part, to tuberculosis of the soft parts as well as of the joints.

The building up of body resistance by fresh air and good food still holds the most important place, but many valuable aids to this older method of treatment are now in use.

Heliotherapy, the treatment by the direct rays of the sun, is of the greatest value. It may be applied not only to the local lesion but also to the whole body surface. This treatment was first emphasized by Rollier and numerous authors have confirmed its value. Pigmentation of the skin without actual burning, is the goal aimed for and this is done by short preliminary exposures to direct sunlight. These exposures are gradually lengthened as the skin becomes more tanned. It is believed by Schantz that the sunlight of the high altitudes is more beneficial than that at sea level where the sunlight is lacking in ultraviolet rays. On the other hand, Bier states that nearly equal effect can be obtained from sunlight in the mountains or on the lower levels. Lovett believes that the length of time of treatment can be shortened and the therapeutic effect of sunrays concentrated by the use of a double convex lens of 72-inch focus, concentrating the rays in a circle of 3 to 5 inches in diameter. This is known as the Thezac-Porsmeur method.

Several authors have reported very favorable results from the use of the so-called coal-arc light. Renst, of the Finsen Institute of Denmark, has obtained by this method unusually good results in tuberculosis of the soft parts and of the more superficial joints, the deeper joints such as the spine and hip not responding as well. He believes this light is much superior to the mercury lamp both in penetration and in the type of skin pigmentation produced. In the series of cases reported by him no form of fixation was used, although weight-bearing was not permitted in joints of the lower limbs.

X-ray therapy is again being brought prominently forward. Numerous articles have appeared from Continental authors. Papers from Eiselberg's Clinic show a large number of cases in which the roentgen ray was used as the main therapeutic agency. Emphasis is laid on the need of heavy aluminum filters to prevent skin burns. They state that the tuberculous tissues are melted out by the ray and are separated from the surrounding tissues by a granular wall. The cavities can be drained by aspiration and radiation begun again in two or three days, and repeated every week or two. Espinola reports that this type of treatment is of great value in tuberculosis of children, especially when it is combined with heliotherapy.

Tuberculin as a therapeutic agent has been both advocated and condemned. Literature is full of arguments both for and against its use. McKnight and Trager are very favorably impressed with its results as an adjunct to other treatment. Kleinberg, in his study of the literature and of his own cases, feels that it is of little or no value. Bacterin therapy may be useful in some cases of mixed tuberculous and pyogenic infection. Autogenous vaccines from the pyogenic organisms may cut down the infection and the toxemia but are better given alone than with tuberculin.

In the treatment of cold abscesses so often found in tuberculosis of the larger joints, aspiration or excision and drainage should never be done unless there is a secondary infection or unless the abscess is about to rupture spontaneously. The large majority of these abscesses will be absorbed if proper treatment is instituted. The danger of secondary infection and the disastrous results that follow such infections absolutely contraindicate surgical interference except as a last resort.

It would seem from a review of our own records and from the study of the literature that the treatment of bone tuberculosis is slowly becoming more efficient and is being directed along the lines of restoration of function rather than of mere inhibition of the diseased process, but that our main reliance must still be placed on prolonged fixation and protection of the affected area. Progress in diagnosis lies mainly in the lines of education of the medical and surgical world to the recognition of the disease in its early, and therefore, curable stage.

I hope that of what I have said to-day you will place in your memory at least this one thing: Early diagnosis makes for early treatment and successful restoration of function. Late diagnosis means prolonged suffering for the patient and an ultimate result that is unsatisfactory both to the patient and to his physician.

SYPHILIS OF THE BONES AND JOINTS*

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PHILADELPHIA

Since the advent of the Wassermann reaction and of radiology, syphilis of bones and joints has been much more frequently recognized as such.

Any bone or joint may be the seat of luetic infection and it is claimed by some that fully 30% of bone infection is of this etiology. The long bones and joints of extremities are the most frequently involved and of these the tibia and knees are the most commonly diseased, although the spine and elbow are involved more often than many suspect, and all recognize that the disease is seen often in membranous bones.

Why this disease should affect certain bones and joints more frequently than others is not definitely determined but severe trauma as a cause is present only in about 15% of cases. The fact that large joints permit greater range of motion and that the bones of extremities are subjected frequently to trivial and easily forgotten injuries might be a cause of predilection. Weight-bearing also might be a factor, as the lower extremity is most frequently involved.

Since we encounter bone and joint lesions of different types in the various stages of syphilis I will discuss these changes in that relation, and except to mention that syphilis renders all other diseases and injuries more chronic in their course, I will not discuss this infection as a complication.

In primary acquired lues there are no osseous disturbances, but as the secondary stage supervenes, exudative thickening of the periosteum, a periostitis, accompanies the rash. The aching and tenderness of long bones, always worse at night, met with at this stage, is the result of this bone change, and should it affect the skull it is manifested by intense headaches.

The joint involvement of the secondary stage is a simple serous synovitis, usually generalized and with its symptoms worse at night. A multiple hydrops articuli may precede the eruptive stage. Pain, tenderness and swelling are present with the synovitis but the joints are not stiff and the pain is not increased by motion. The fever, sweats, redness of the skin and frequent endocarditis of acute rheumatic fever are absent. The bone and joint symptoms of this stage are of short duration and the process is never destructive.

In the tertiary stage we find a constructive osteitis and osteoperiostitis, with the cortex involvement most common. Early these changes are visible on one side of the bone only. Later the whole structure is thickened. This process rarely involves a single bone. In the long bones we first find an elevation of the periosteum due to hyperplasia, and later distinct, laminated, calcareous deposits are visible underlying this membrane. Later more calcium is deposited with each exacerbation and the cortex and periosteum fuse. The termination of this process is by the slow development of exostoses, usually multiple, painless, irregular in outline, resembling exuberant callus, and encountered most frequently near the ends of the long bones.

When the cortex alone is involved the bone is greatly thickened and it casts a very dense x-ray shadow, due to excessive calcium salts. This thickening may extend toward the medulla or toward the periosteum. Due to these dense lime deposits, which cut off the blood supply, gumma formation may occur with pseudo inflammatory symptoms. When subperiostial, the process is very acute as compared to the usual osteoperiostitis. At first there is a circumscribed, hard, flattened swelling attached to the bone, with the overlying tissues attached to the tumor. As it grows it softens and the superficial structures become edematous and finally become a part of the necrotic mass. These gummata are usually single and may be small, the so-called "bone blisters," or large enough to cause a pathological fracture. The x-ray shows them to have a translucent center with a sclerosed wall and an overlying periostitis. They may rupture externally, and when they do, the ulcer is very slow to heal because of a poor blood supply. If proper treatment is instituted before severe necrosis takes place the bone scar will resemble an exostosis. If necrosis has begun the healed area shows a depression in the bone, surrounded by an elevated periostal overgrowth. Deep gummata in the spine cause a destruction resembling Pott's disease in all physical manifestations, except the possible presence of sinuses in the latter.

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True syphilitic osteomyelitis may result from necrosis of the center of the eburnated bone but not as a primary process. It usually affects one side of the bone only in multiple foci, whereas pyogenic osteomyelitis involves the whole diaphysis. The onset and course is never acute in syphilis and there is no sepsis and the sequestrum takes years to separate. This necrosis, in the skull, gives it a moth-eaten appearance.

The joint changes met with in the tertiary stage are:

I. Arthralgia, manifested by severe joint pain, worse at night, relieved by exercise and frequently multiarticular, with one joint predominating and with no lesions demonstrable to account for the symptoms.

II. Synovitis, with the joint greatly distended and little pain and no shaft involvement. This is usually multiarticular and may recur or become permanent.

III. Monarticular arthritis resembling in all respects the synovial type of tuberculous arthritis, except that the pain is less. It begins in the synovia or near-by bone as an inflammatory process and manifests itself by moderate pain increased by motion, slight rigidity, limitation of motion, and moderate disability. The contiguous bony parts are frequently swollen, for the infection extends at times from bone to joint. Abscess formation may be present in a joint, with only moderate disability. If proper treatment is instituted before bone destruction has advanced, no ankylosis will result. The knee, spine, elbow and hip are the joints most frequently involved.

Charcot joint is a neuropathic disturbance accompanying tabes and is not primarily syphilitic. It manifests itself by marked swelling, usually painless, crepitation, fluctuation and excessive mobility. The x-ray shows massive joint destruction with an irregular overgrowth of bone. In case of knee involvement the tibia shows more destruction than the femur.

The bone and joint changes in congenital syphilis are different from the foregoing and are of two types: (1) those present at birth or occurring soon thereafter, and (2) those appearing after the seventh year.

The early bone changes are dependent upon a mild osteochondritis at the junction of the epiphysis and diaphysis, the so-called Wenger's disease, which is the cause of fractures at birth brought about by little or no violence. These show no rigidity, pain, nor tenderness and only slight ecchymosis, with a pseudoparalysis of the part. The shaft away from the fracture is always tender. If the injury extends into a joint there is a marked painless distension present.

Also we meet an epiphysitis, frequently gummatous, beginning acutely after birth and not the result of an injury. This manifests itself by swelling, tenderness, pain on handling, fever, and a partial paralysis of the part. This may rupture into the neighboring joint, causing a tuberculous-like arthritis.

As a result of this osteochondritis, often there is a permanent distortion and enlargement at the epiphysis, due to a disturbance in growth there which causes a thickening of the diaphysis and an irregularity in the line of junction with the epiphysis.

Dactylitis, a painless gradual swelling of a phalanx, occurs much more frequently in congenital than in acquired syphilis and more often in negro than in white children. There is discoloration, tenderness and swelling, confined to the bone. When of tuberculous origin the soft parts also are involved. The skull bones in this stage are frequently involved, showing multiple gummata which give a moth-eaten x-ray picture. This is craniotabes.

In the later hereditary manifestations one encounters two types of changes: (1) Greatly thickened bone due to a periostitis and symptomless except for vague boring pains, worse at night, and marked tenderness on pressure, exemplified by the sabre tibia. The deformity is classical. There is no soft part involvement and the x-ray shows an evenly distributed, sharply outlined, dense cortex. These never suppurate and disability is only slight. At times small subperiostial gummata are present, the so-called bone blisters. (2) A condensing condition of the bones leading to necrosis, especially in bones frequently exposed to trivial injuries, which ends in a melting away of the osseous structure.

The joint manifestations of hereditary lues are polyarticular as a rule and are primarily joint infections. A painless joint effusion is sometimes seen accompanying a near-by bone lesion but this is not the true arthritis. Eight per cent of juvenile arthritis is syphilitic and 45% of congenital syphilitics have joint lesions. In this latter the onset is gradual and monarticular with pain, worse at night, swelling, tenderness and moderate disability. The x-ray may be negative early and the symptoms are the result of a periarthritis, thus appearing clinically as if joint destruction were going on. When advanced, however, joint destruction is present, beginning in the synovia and extending to the cartilage and bone. When a symmetrical synovitis is encountered it is almost pathognomonic of congenital syphilis.

The diagnosis of any of these conditions depends on four main factors, only one of which is absolutely accurate: (1) A careful, complete and painstaking family and personal history. (2) Blood and spinal fluid Wassermanns should be taken in all bone and joint lesions, for syphilis can simulate any osseous disease. To be sure, only about 50% of bone lues gives a positive reaction; still the test is of value. Other members of the family should be tested also if possible. (3) Careful x-rays should be made of all lesions; and (4), most important, a saturating and continuous therapeutic test should be given, for small doses of antiluetic drugs may be badly borne whereas sometimes large doses are well assimilated and produce results.

No subjective and objective symptoms are constant except perhaps chronicity, but the possibilities of the case plus the above four factors should be considered in the diagnosis.

Conditions confused with and which must be differentiated from bone and joint syphilis are pyogenic infection, acute rheumatic fever, rickets, tuberculosis, bone cysts and tumors, Paget's disease, typhoid infections and chronic metastatic arthritis. It is, of course, possible to have a mixed infection, for luetic bone makes an excellent breeding place for other organisms.

The treatment consists in combating the syphilis primarily and actively and supporting the general health. When joints are involved or gummata present rest in bed is indicated. Should there be permanent injury to the joints, causing pain on motion, a fixation apparatus should be used for the relief of this. If bone pains persist, drilling the eburnated cortex will afford relief.

The prognosis is good for almost complete recovery and restoration of function, except where there has been too much destruction or distortion of the bone or joint. These deformities are permanent and must be treated individually.

Since bone and joint syphilis is so comparatively common no stone should be left unturned to establish early a correct diagnosis, bearing in mind especially the therapeutic test as a diagnostic aid, and so to establish proper treatment before deformities have occurred.

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DISCUSSION

DR. J. TORRANCE RUGH (Philadelphia): I want to emphasize with all the force possible the points brought out by Dr. Willard in his paper. Experience has shown the best possible results from an early diagnosis in these cases. In the first place, we are disposed to rely too much upon x-rays, and in the next place, the vast majority of x-rays that are made in these cases are poor; they do not show sufficient detail, and if any reliance whatsoever is to be placed upon the radiograph, you must insist that it shall bring out the details of the part which you wish to investigate. Too great emphasis cannot be placed upon this point.

Another fact to be emphasized is that primary tuberculosis, as it is ordinarily understood (it is always secondary in a joint) is essentially a disease of childhood. One finds it in adult life but very much less frequently. It is a disease that is confined to the age when there is great circulatory activity in the epiphysis of the long bones and to the parts which, because of this great circulatory activity, are more susceptible to traumatism, and therefore there is a focus of lessened resistance established in them.

The next point is that the condition is most commonly monarticular. One rarely ever finds two joints involved in an active tuberculous condition at the same time. The experience of practically all orthopedic surgeons emphasizes this fact because we see so many of these cases that are polyarticular in their manifestations which have been diagnosed as joint tuberculosis, and it is the rarest thing to find polyarticular involvement where the two joints are infected or involved at the same time. If you have polyarticular tuberculous involvement, you will find there has been first involvement of one joint and then six months or a year afterward the involvement of the other one.

In the examination of the patient, I want to lay emphasis on one point—don't use violence. The old textbooks in surgery recommend in examining the patient to tap the patient on the top of the head or to have the patient drop on the heels. Don't do it. If you are examining a hip joint case, don't strike the sole of the foot. You are dealing with structures where there is absorption, molecular death, rarefaction in the soft, bony structure. If you use too much force you are liable to produce further destruction; and it is this destruction you wish to prevent.

Another point is treatment. In the treatment of these cases there are two schools: one school which tries for absolute ankylosis, the other which tries for the retention of function. I believe strongly in the retention of function, especially in children. In adults, ankylosis will give better ultimate results and more freedom from relapse, but in children, I try for the retention of function. In order to accomplish this the case should be seen as early as possible, so as to prevent the breaking down of the process. By fixing the parts and using such methods as may seem best in the individual case, the degree of involvement is lessened and therefore the restoration of function in the part is favored. I believe, in the vast majority of these cases (there are exceptions to every rule), that there is no such thing as a standard method of treatment, but in the greater number, by limiting the degree of involvement, you will retain a degree of function that will be of the greatest possible value to the patient in after life.

One point in regard to the problem of syphilis and bone and joint tuberculosis: It is a well-known fact that in a great many cases, it is absolutely impossible to differentiate syphilitic from tuberculous bone disease. It is also a well-known fact, as shown by the old clinicians before the days of the Wassermann or of the x-rays, that you may have a coexistence of the two, and that a tuberculous case is more susceptible to the action of syphilis and a syphilitic case is more susceptible to the action of tuberculosis. You will, in many cases, find a coexistence of the two diseases. Under those circumstances, they must be treated as tuberculosis.

Dr. James O. Wallace (Pittsburgh): This question of tuberculosis of the joints has been very nicely brought out by Dr. Willard. One thing I want to emphasize is the necessity for a careful examination and differential diagnosis of the condition you have. There are a great many children treated for tuberculosis of the various joints that have never had tuberculosis, and in most of these cases they do well without extension, without plaster casts, under the sun treatment. There are many of these cases which are nontuberculous that are treated as though tuberculous.

In the diagnosis of early tuberculosis, of course, the family history is a necessity, but far and away the x-ray is the best diagnostic aid of any. I do not mean the ordinary x-ray, one that shows the trabeculæ of bone, and not one which shows definition of bone. You will find in the very early case a rarefaction with an appearance like ground glass, afterwards atrophy, and then necrosis.

I do not agree with Allison's classification of productive tuberculosis. I believe that it is essentially a rarefying disease, and that if it is not at the epiphysis you probably have a mixed infection, and you may get a productive formation in healing. I am very suspicious of cases that get better after six weeks' treatment. They are not tuberculous; they are of a type which we call noninfectious.

In a hospital no one puts on a plaster cast. In children's cases we use extension, and very often in addition to that we have to put on a cast to keep the part absolutely at rest.

In five years from now I do not believe any one will be using the Hibbs and Albee method, especially in the very early cases—within the first five years. I believe that as time goes on, no one will use them, because they are only an aid. I have done a great many Hibbs and Albees and have studied them over long years. I have learned that when you get good healing, the anterior surface of the good healthy vertebræ above is bent forward and deposits itself on the superior surface of the vertebræ below. If patients are given proper frame treatment and proper cast treatment, you do not have to operate on them. Operation is an added risk.

In this connection, I believe that no one should give ether in operating on tuberculous cases. It has been my practice during the last three or four years to use nothing but gas in cases of tuberculosis of the bone, because too many times I have seen lighting up of latent foci in the lungs. That is one of the main reasons why I do not do the Hibbs and Albees. The Hibbs and Albees that are the most successful are not ones that have been done with any correction of the deformity, but are ankylosed in bad position, and in cases of bad deformity very few live past twenty years of age.

In the question of syphilis, family history is of great importance, yet you cannot absolutely rely on it. In one case I reported we had a gumma of the knee. The child was one of fourteen, the rest all healthy. I could enumerate case after case where there have been healthy children; yet in the same family there is one case of congenital syphilis.

Not long ago I had the case of a boy four years of age with a history of definite trauma in the upper part of the shaft, with pain. The x-ray looked as though new growth was extending through to the soft tissues. Unfortunately I did not take a Wassermann of this case because there was a healthy baby eighteen months old right following this child. The lesion had the typical appearance of sarcoma, was in the typical place for sarcoma, and the x-ray looked like sarcoma. I operated on that case and found an acute gumma. The cortex was broken, there was granulated tissue, and we had a four plus positive Wassermann. There again it goes to show that the family history has to be taken with a grain of salt.

In regard to the value of the Wassermann: Syphilis may be a complicating factor, and even though a positive Wassermann may be obtained, a diagnosis of syphilis may at times not fit with the conditions of which the patient is complaining as syphilis. The following case is a good illustration of this: A man came in, who definitely admitted he had syphilis. He had a positive Wassermann, but the x-ray did not show a syphilitic condition, but rather a necrosis of one of the tarsal bones. He was put on mercury and potassium iodid, but did very badly. He was put on salvarsan, the bone was removed, and the lesion cleared up. There was a case with all the evidences of syphilis except the x-ray. A point I should like to make is that simply because you have a positive Wassermann or a positive Von Pirquet is no evidence that the patient has syphilis on the one hand or tuberculosis on the other. Again, I believe that in all cases of arthritis, if you have a careful examination with the x-ray, you will find that there is bone involvement.

Dr. George M. Dorrance (Philadelphia): In discussing Dr. Willard's and Dr. Buzby's papers, one at first finds little to add and much to commend. It must be remembered that both diseases can and do occur at the same time in the same case. If possible eliminate the specific factor. The Wassermann test will assist you to do this. But don't rely entirely upon any one test. When in doubt as to whether the bone lesion is specific or not, be sure to examine the membranous bones of the septum, because for some unexplainable reason these are usually the first affected and are the ones most irreparably destroyed by this disease.

We cannot make it too strong that this type of disease (tuberculosis of the bones) is nothing more than a general constitutional disease with local manifestations, and that it must be treated as such and seldom requires much operative surgical work.

I want to emphasize that the general tendency in tuberculosis is toward cure if given half a chance. But if mixed infection occurs then that is a different story. That is one of the reasons why tuberculosis of the lungs is difficult to cure. It is a mixed infection. A tuberculous joint or a tuberculous empyema should practically never be opened and drained. They all do badly. If drainage is necessary, then tap under the most perfect technique so that infection will not occur. If you infect a case you have done much harm. Resections are seldom necessary and leave a patient permanently crippled.

I am and have been for some time using the sun treatment combined with x-ray therapy with gratifying results. Strauss showed that two hours' exposure to the sun was sufficient to render cultures of tuberculosis sterile. Koch demonstrated that the tubercule bacillus was rapidly killed by direct sunlight but more slowly by diffused daylight.

If this be so, it would seem advisable to take advantage of some variety of light treatment. Dr. Willard spoke of heliotherapy, or the treatment by the direct rays of the sun, as being first emphasized by Rollier. Rollier did popularize the treatment, but Ollier and Poncet of Lyons, France, in 1840, were the first modern surgeons to write and advise this treatment. However, if the translations are correct, it was used by the early Greek and Roman physicians.

The so-called sun cure means absolute rest in bed, with a correct diet, with slight extension or postural pressure and a gradual and careful exposure of the entire body to the sun's rays. Remember we are treating a constitutional disease. I am against the application of the plaster cast which fixes the child in a vice and causes atrophy from disuse and shuts out the sun entirely; whereas, a slight extension with the child in bed will just as efficiently relieve the pain. The extension allows of very slight movement, which tends to prevent ankylosis. A perfectly movable joint is now our goal, and not a stiff one as of the past. When will the surgeons get out of the rut of plaster casts for tuberculous joints? They tell you it is necessary to relieve pain but I don't agree with them. If you order a small dose of correctly filtered x-ray it will greatly assist in relieving the pain, but extension is the first consideration.

These cases should no more be treated in a closed house or ordinary hospital ward than the cases of tuberculosis of the lungs, which method is practically extinct. When will the surgeons reach the same idea?

The sun treatment is just as much a drug as strychnine and must be just as carefully given. To tell a patient to go out in the sun is criminal. It should be given in gradual, small doses. The best results I have ever seen have been at Rollier's clinic at Lysin, but equal results are obtained in the United States of America.

Also don't forget that a combination with the x-ray seems to give even a better result in the infective cases than sun alone.

These cases require just as much surgical care, and the results are so much better in the average man's hands, I am sure, than the old-fashioned idea of putting them in a cast and in the ward and not giving them the individual attention that every one of these cases should have. That does not mean less surgical care, but more.

Dr. Albert E. Roussel (Philadelphia): Speaking on a surgical topic, I simply want to point out one or two rather pertinent points. About eight to ten per cent of children at fifteen years of age respond to the Von Pirquet and other tubercular tests, most of them having no joint or other complications. Consequently those reactions simply mean that tuberculosis of one form or another, and generally pulmonary tuberculosis, has taken place before that time. Over fifty per cent of cases that come to postmortem show previous tubercular infection. Another point, and there I differ from my friend Dr. Dorrance, is that I do not think the consensus of opinion among internists is that pulmonary affusions taking place in the course of active pulmonary tuberculosis are better treated by resection and drainage.

Dr. J. P. Crozer Griffith (Philadelphia): I would hesitate to speak in the presence of so many surgeons, were it not that I wish to say a few words as representing the large class of men who admit that their knowledge of this subject from personal experience is limited. I desire to do this because of a recent experience which is very vivid in my mind, as well as of some others of older date. I was called within two weeks to see a little boy, who, I was told, had acute articular rheumatism. The history was very suggestive, although the age of the patient seemed to be rather against the diagnosis—only that of six years. Examination showed it to be very evident that the disease was acute osteomyelitis, and that the patient was in a very precarious condition. He was rushed to the hospital and operated on; but he died the next day. I am not reflecting upon the attending physician in any way whatever. The diagnosis was far from clear, but it is well conceivable that an early examination by a surgeon might have saved the child's life.

Several years ago I saw a case of hip joint disease diagnosed as such by my former friend and hospital chief, the father of one of the speakers, Dr. Willard. The patient moved away from this part of the country. The history which later reached me was, that on one occasion a very acute intense pain developed about the hip joint and persisted. A physician was called in who made the diagnosis of sciatica—a rather remarkable one for a child of that age. Abscess formation followed, and after weeks and months of suffering an inch or two was lost in the length of the leg by absorption of the head of the femur after the long suppurative process. There can be no question in the minds of any of us that an early diagnosis here would probably have made all the difference between a comparatively healthy child and a cripple.

I may refer to another case, a little girl whom I had seen on several occasions for a malady not in any way connected with the bones. After about a year I was sent for in a big hurry to visit the patient out of town, because the physician who was called in had made the diagnosis of caries of the spine. My visit showed that there was no doubt whatever about this, and I learned in addition that for a long time an osteopathic physician had been giving manipulation to the bones of the spine, producing always excruciating pain. Abscess-formation developed and the child died.

Now in the course of a fairly extensive consultation practice, a great variety of pathological conditions naturally come to my observation; but I want to emphasize the statement that I would not trust myself in any way to make a diagnosis of a possible incipient case of disease of the bones or joints, and it does not seem to me wise for any man who is not doing an extensive surgical or orthopedic practice to trust himself in this way. It is easy enough to make a diagnosis when the case is advanced; anybody can do it then, but then it is too late. If we fail in our diagnosis, look at the reproach which we properly incur; and, what is worse, look at the result to the patient! I am standing here solely for the purpose of urging, on my own behalf, and for all in the class to which I belong, that whenever we have the slightest doubt, the patient should be seen promptly by an orthopedic surgeon.

Dr. Buzby (in closing): I have only a few things to add. I wish to emphasize the point that Dr. Rugh brought out about the coexistence of tuberculosis and syphilis. It has frequently occurred. It is either one or the other which makes the field very fertile for further infection. We may, as I showed in the slides, have either tuberculosis or syphilitic caries of the cervical spine. A patient with a positive Wassermann may ultimately get tuberculosis of the lungs. In a case like that we must treat the syphilis; and the treatment of the deformity is the same in either case, so no ground need be lost.

As I also tried to bring out, a positive Wassermann is not alone of importance, because we all know that many patients have syphilis in addition to other things. But the four factors that are of importance are the history and the examination of the patient, the x-ray picture, the Wassermann, and most of all the therapeutic test, because we all agree that in a patient with a joint or bone lesion which is relieved by the administration of mercury and iodids and salvarsan or neosalvarsan, we can conclude nothing else but that it is syphilis.

Dr. Willard (in closing): I wish to comment very briefly on some of the discussion; most of my comment being entirely favorable to the discussions made. As to x-rays, there is no question but that too many of our x-rays are too poor to make an accurate diagnosis of bone lesions. As to retention of function, I think we always try for it, but there is a large number of cases in which retention of function cannot be gotten. If the pathological changes have become great, if the anatomical changes in the bone are so extensive that the normal joint cannot be hoped for, then fixation of the joint is the better. In adult cases this should always be striven for. I also believe in all cases of spinal tuberculosis that ankylosis of that short part of the spine is the thing that we want because ankylosis of a percentage of the spinal column is not going to affect the full function of the spine.

All that Dr. Dorrance has said of heliotherapy is perfectly true. I think he believes we are not very fond of heliotherapy. We are extremely fond of it. We have near Philadelphia a very good place for giving heliotherapy at Atlantic City where we have a large sanitarium. New York City does the same thing, carrying out the same general routine that is used in all the clinics where the work is done.

I might rise for a moment in defense of the plaster cast. In certain periods it is very valuable, but that period is not in the acute stage. Absolute rest in bed, extension, careful supervision and heliotherapy is to be used then; but in some of these subacute cases a plaster cast will fix the joint and will prevent further trauma and further lighting up of the disease. A plaster cast applied to joints in childhood does not cause ankylosis. It is remarkable how long you can fix a child's joint and yet get free motion.

To sum up all that has been said to-day, we can say this: Tuberculosis of the bones and joints is very slow and insidious in its onset; you have to rely on careful physical examination for diagnosis, and x-ray, laboratory and history are only aids; careful personal examination of the case is the thing on which you must base your early diagnosis.

SUBJECTIVE SYMPTOMS AND THE DIFFERENTIAL WHITE BLOOD CELL COUNT AS AIDS IN PROGNOSIS IN PERNICIOUS ANEMIA*†

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It is unwise to give blood transfusions in pernicious anemia unnecessarily, for the number of transfusions one patient may take without dangerous reactions is limited. If a remission in pernicious anemia is imminent or in progress, a blood transfusion is probably not necessary. Therefore if such remissions could be predicted, it would be helpful to those who use blood transfusions in the treatment of this disease. During the course of studies on the mechanism of hemolysis in the hemolytic anemias[1, 2] information was made available whereby we were able to predict in a large percentage of cases an oncoming remission several days before it became apparent in the erythropoietic system.

The studies referred to above had to do with the antihemolytic power of serum. Normally the blood contains hemolytic substances—fatty acids, soluble soaps, etc.—and these do not cause hemolysis probably because of the powerful antihemolytic property of normal blood serum. Our studies demonstrated a pronounced fluctuation in, and diminution of, antihemolytic power of serum from patients with hemolytic anemia, thus suggesting that the hemolysis occurring in these cases was due to the normal hemolysins present in the blood, free to act because of the lowered antihemolytic power of blood serum.

The method employed to make quantitative measurements of the antihemolytic power of serum has been presented in earlier papers,[1, 2] and the details of the technique and the controls run will not be repeated here. Sodium oleate was the hemolysin used routinely because it is a substance which is probably present in the body; and saponin, as a hemolytic agent not present in the body, was sometimes used in a parallel test with sodium oleate. A number of tubes, each containing 2 c.c. of a different dilution of hemolytic agent were set up in series, and to each tube 0.25 c.c. of the serum to be tested for protective power against hemolysis was added. This was heated at 37 degrees C. in the water-bath for one-half hour, cooled for one-half hour, and then 0.25 c.c. of a 0.75 per cent suspension of washed guinea pig cells was added as indicator. This preparation was incubated at 37 degrees C. in the water-bath for two hours, allowed to sediment in the ice box for one hour, and then a reading of hemolysis was made. The tubes carried dilutions of sodium oleate of 1-45,000 to 1-100,000 in steps of 5,000, thus: 1-45,000, 1-50,000, 1-55,000, 1-60,000, 1-65,000, etc. In such a series normal serum, diluted 1-20 as used, regularly protected guinea pig cells against hemolysis up to strengths of 1-45,000 to 1-55,000, so that any hemolysis in the tubes containing solutions of sodium oleate weaker than 1-55,000 might be considered as indicating a diminution in the protective power of the serum being tested. With saponin, a weaker hemolytic agent than sodium oleate, the tubes carried dilutions of 1-18,000 to 1-34,000 in steps of 2,000, thus: 1-18,000, 1-20,000, 1-22,000, etc. In this hemolytic test, the highest dilutions in which hemolysis was seen in the presence of normal serum were 1-18,000, 1-20,000 and 1-22,000, and if any hemolysis was seen in tubes containing solutions of saponin weaker than 1-22,000 it was considered as indicating a diminution in the antihemolytic power of the serum.

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Sufficient data are not yet available to permit a definite statement as to what may be the significance of the reduction in, and fluctuation of, the degree of antihemolytic power found in the serum from cases of hemolytic anemia as mentioned above. It was noticeable, however, that these changes in the hemolytic power of the serum did not run parallel with the amount of anemia or the qualitative changes in the red blood cells, and that it did run parallel with the subjective symptoms of the patient. When the antihemolytic power of the serum was increasing—approaching normal values—the patient felt better; and if the antihemolytic power of the serum was low, the patient felt badly even though the red blood cell count was fairly high. Furthermore, if the antihemolytic power of the serum showed sustained improvement, a remission, or at least a period of temporary improvement soon followed; and while the antihemolytic power of the serum remained low, no improvement took place. In one case a low value for the antihemolytic power of the serum in a patient with 4,000,000 red blood cells enabled us to predict a relapse which showed its first signs in the erythropoietic system four days later. These observations suggest that, regardless of the red blood cell picture, a blood transfusion might be indicated in pernicious anemia when the antihemolytic power of the serum is low; and that it is not indicated when the antihemolytic power of the serum is approaching normal values.

It is immediately apparent, however, that the only technique for the quantitative measurement of the antihemolytic power of serum so far devised is too difficult to be used as a routine clinical procedure. In searching our case records for other features that might more or less parallel the fluctuations in antihemolytic power, in addition to the subjective symptoms already mentioned, one came to light, namely: the absolute number of polymorphonuclear leucocytes found.

In Tables I-IV, several abstracts of case records are presented showing that the degree of anemia present had no influence on the level of antihemolytic power of serum, and that it did vary more or less directly with the absolute number of polymorphonuclear leucocytes counted.*

TABLE I

W. A. J.—Age 47—*Pernicious Anemia*

R. B. C.	Per Cent Hb.	Per Cent Retic. Cells.	W. B. C.	Per Cent P. M. N.	Absolute Number P. M. N.	Antihemolytic Value of Serum.	Remarks.
1,632,000	45	.6	4,320	57	2,462	60,000	Feeling bad.
2,184,000	56	5.4	3,840	54	1,874	75,000	Feeling bad.
2,436,000	53	5.6	3,720	53	1,972	70,000	More cheerful.
2,648,000	68	...	4,000	45	1,800	65,000	
3,400,000	78	...	4,520	56	2,531	50,000	Feeling excellent. Discharged.

This patient showed very clearly that with the hemoglobin and red blood cell count improving, the antihemolytic value of the serum and the absolute number of polymorphonuclear leucocytes may decrease; and that during such times the subjective symptoms may be discouraging.

TABLE II

S. F. M.—Age 47—*Pernicious Anemia*

R. B. C.	Per Cent Hb.	Per Cent Retic. Cells.	W. B. C.	Per Cent P. M. N.	Absolute Number P. M. N.	Antihemolytic Value of Serum.	Remarks.
2,920,000	60	.1	4,920	59	2,903	80,000	
3,264,000	65	0	7,240	66	4,778	65,000	
2,568,000	66	.1	12,240	82	10,043	70,000	Carbunkle on neck. Operation.
2,496,000	66	0	9,600	80	7,680	60,000	
2,576,000	68	0	7,120	68	4,842	50,000	
2,800,000	70	.3	5,160	66	3,406	70,000	Patient discharged.

The case presented in this chart illustrates an exception. During the acute infection, not only did the red blood cell count become less, but the antihemolytic power of the serum diminished also. Under these circumstances, changes in the absolute number of polymorphonuclear leucocytes did not run parallel with fluctuations of the level of antihemolytic power of the serum.

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*In reading the tables it is necessary to remember that the figures representing the antihemolytic power of serum were the dilution of the hemolytic agent, sodium oleate, at which no hemolysis of guinea-pig corpuscles occurred in the presence of the serum being tested. The higher the figure, the greater dilution of hemolytic agent, i. e., the weaker the solution, causing hemolysis. Therefore the higher the figure, the lower the antihemolytic power of serum. Normal serum never permitted hemolysis in solutions of sodium oleate weaker than 1-55,000. Any figure higher than this represents a relative diminution in the antihemolytic power of serum.

TABLE III

F. T. H.—Age 35—*Pernicious Anemia*

R. B. C.	Per Cent Hb.	Per Cent Retic. Cells.	W. B. C.	Per Cent P. M. N.	Absolute Number P. M. N.	Antihemolytic Value of Serum.	Remarks.
1,272,000	27	1.2	3,000	49	1,470	90,000	
1,076,000	22	1.2	3,730	54	2,014	80,000	
536,000	13?	0	1,960	35	686	90,000	Transfusion.
936,000	20	0	2,280	56	1,277	85,000	
614,000	16	0	3,200	46	1,472	65,000	Left hospital against advice.

This patient was in bad condition throughout. Following the period covered by the chart there was rapid improvement for a short time, after which there was an equally rapid relapse, ending in death.

TABLE IV

F. L.—Age 35—*Pernicious Anemia*

R. B. C.	Per Cent Hb.	Per Cent Retic. Cells.	W. B. C.	Per Cent P. M. N.	Absolute Number P. M. N.	Antihemolytic Value of Serum.	Remarks.
3,750,000	85	0	4,500	46	2,070	65,000	
3,800,000	90	0	4,000	46	1,840	70,000	Transfusion after this.
4,000,000	97	0	5,500	53	2,915	55,000	
4,250,000	100	0	6,500	63	4,095	50,000	Patient discharged.

This patient presented a very mild case. He probably would have improved without transfusion; but it is interesting to note the prompt increase in antihemolytic power of serum and absolute number of polymorphonuclear leucocytes following the transfusion.

Examination of these tables shows that fluctuations of the degree of antihemolytic power of the serum bear no relation to the red blood cell count, and that they are roughly parallel to changes in the absolute number of polymorphonuclear leucocytes counted. The fact that variations in the level of the antihemolytic power of the serum, so closely related to the subjective feelings of well-being or illness on the part of the patient, bear no relation to the degree of anemia, agrees with the clinical observation so often made that the general condition of the patient frequently is wholly independent of the degree of anemia present. And the parallelism, so commonly found, in the absence of infection, between the level of antihemolytic power of the serum and changes in the absolute number of polymorphonuclear leucocytes is interesting. If our statement is recalled that fluctuations in the antihemolytic power of serum have prognostic value in pernicious anemia, the help to be derived from recording the variations in the absolute number of polymorphonuclear leucocytes becomes immediately apparent. It aids one to determine, before other changes in the blood picture occur, whether or not a remission is to be expected. It should be emphasized here that there is no absolute relationship between the total number of polymorphonuclear leucocytes present and the level of antihemolytic power of the serum. The point brought out by study of the tables is that *changes in the number* of polymorphonuclear leucocytes are in the same direction as *variations in the level* of antihemolytic power of the serum.

Each patient with pernicious anemia must, of course, be studied individually; and each proposed transfusion determined upon on its own merits after careful weighing of all the features of the case in relation to each other. Consideration of the two features mentioned in this paper, namely, the subjective symptoms of the patient and the fluctuations in the absolute number of polymorphonuclear leucocytes, is an aid to judgment in such situations.

CONCLUSIONS

Improvement in the level of antihemolytic power of the serum in pernicious anemia precedes an oncoming remission by several days. Such elevation of the antihemolytic power of the serum becomes manifest very early by improvement in the subjective symptoms of the patient and frequently by an increase in the absolute number of polymorphonuclear leucocytes counted. These features, therefore, help one to predict an oncoming remission, and for this reason are an aid to judgment in deciding for or against a proposed blood transfusion.

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DISCUSSION

Dr. George B. Sickel (Chester): I think the fact is generally admitted, as Dr. Evans has stated, that severe reactions occasionally follow transfusions of blood in pernicious anemia, which often cannot be explained and which occur in cases in which the blood has been carefully typed. Therefore, any information which will indicate an approaching remission or relapse, and which will show the inadvisability or the advisability of doing a proposed transfusion, will certainly be of considerable value. The fact that the leucocyte count falls and rises with periods of relapse and of improvement has been many times noted. It is also true that the absolute number of the polymorphonuclear leucocytes also varies with these periods of relapse and remission. For this reason the suggestion in Dr. Evans' paper that such changes be utilized to aid one to predict an oncoming remission or relapse would seem to be of importance.

One must, of course, realize that there are limitations to such a criterion. There are many factors that influence the number of polymorphonuclear leucocytes. This difficulty is illustrated in one of Dr. Evans' cases, that of a carbuncle complicating the anemia, the increase of polymorphonuclear cells being caused by the acute infection and not by improvement in the anemia. Therefore, as was emphasized, one determination will sometimes lead you astray. We have studied rather intensively for the past three or four months one of our cases and on one occasion thought a remission was approaching as the number of polymorphonuclear cells doubled. Subsequent counts, however, showed a steady decline and this was accompanied by a corresponding change in the patient's general condition. So we feel, as he has stated, that repeated determinations of the absolute number of polymorphonuclear cells are necessary, and that it is only by observing their general trend rather than by making isolated observations that one gets the best aid from these counts.

Another point of interest in this study (and I am sorry that Dr. Evans did not show the charts of all of his cases) is that while one might reason that as the antihemolytic level of blood serum rises and indicates increased protection against hemolysis the absolute number of polymorphonuclear cells should also increase, such does not seem to be always true. In some of his determinations the antihemolytic level of the blood serum rose while the absolute number of polymorphonuclear cells decreased.

The value of these determinations is in the change in the absolute number of cells, rather than in the actual number, and if one studies the trend of these changes in relation to the general condition of the patient one may be influenced wisely to eliminate or postpone a proposed transfusion. The point that particularly appeals to me is that these determinations may be made by one having ordinary laboratory apparatus, in contradistinction to the determinations of the antihemolytic level of the blood serum, which is limited to well-equipped laboratories.

Dr. O. H. Perry Pepper (Philadelphia): I should like to ask Dr. Evans whether or not he considers the increase in the polymorphonuclear count as being specific, or whether it is merely an evidence of improved marrow functioning. The polymorphonuclear leucocyte is produced in the bone marrow, as are certain other of the white cells of the blood, and I am interested to know whether these other cells are also increased under the conditions concerning which Dr. Evans has spoken. In other words, is Dr. Evans using the polymorphonuclear leucocyte count merely as an evidence of improved marrow functioning as a whole, or is it a specific increase?

Dr. Harold W. Jones (Philadelphia): Dr. Evans opens up an interesting point which, if it will work out, and it seems to have worked out well in his cases, will be very helpful in blood transfusion work. Of course, in a case such as he has shown, with a hemoglobin between 80 and 90 per cent, one can afford to wait if there is any likelihood of a remission before transfusing. But in cases where the hemoglobin is 20% and lower it would certainly be unreasonable to wait for a rise in polymorphonuclears. Better transfuse and hope that a remission will follow. The question of how many transfusions a patient may receive before a severe reaction occurs is a difficult one to decide, and so far no method has been devised to determine this. I have given a patient 16 transfusions at intervals of 5 days before any reaction occurred. It is important not to wait between transfusions until the blood has dropped back to its former low level. This drop usually begins at the third to fifth day. And it is at this point that another transfusion should be given. It seems to me that it would be better to attempt to stimulate a remission by the repeated transfusions of relatively small amounts than to wait for the indications of a remission by polymorphonuclear increase.

Dr. B. L. Crawford (Philadelphia): I want to ask Dr. Evans on what he bases his positive diagnosis in these early cases. Is it the blood picture alone or is it the high color index, associated with the clinical manifestations of pernicious anemia?

The fact of the persistently low total white cell count with the relatively low polymorphonuclear cell count has often been referred to in literature and I have also observed it in a number of advanced cases of supposed pernicious anemia. I would like to know if Dr. Evans has found this to be true in these early cases of pernicious anemia and whether he thinks it can be relied upon as a diagnostic point.

Dr. William W. G. Maclachlan (Pittsburgh): I should like to ask Dr. Evans a question which may be rather unfair, in that he did not mention the subject. The question is whether he found any change in the reticulation with the increase in the polymorphonuclear count? During the last couple of years I have attempted to follow the variation of the reticular count and at times felt that it was decidedly of value in indicating an oncoming remission. Again, while one is giving transfusions it is valuable. At other times, however, a marked increase rather intimated that a bone marrow failure was developing. I should like to ask about that point.

Dr. Evans (in closing): Dr. Sickel raised the question whether, since an increase in the antihemolytic power of serum enabled us to predict a remission, would not a decrease in the antihemolytic power enable us to predict a relapse? This would seem reasonable and probably is so, but I have not enough data on this point to permit definite conclusions. One case may be cited in this connection, however. This patient had had antihemolytic values very nearly normal for more than two weeks and a red blood cell count of over four million. About this time, we found on two successive days, much to our surprise, that the level of antihemolytic power shown by her serum had become markedly lowered. We ventured to predict that a relapse was coming, and in about five days, a genuine relapse had set in. In this case, had we had the courage of our convictions and given the patient a transfusion in spite of the high red blood cell count, we might have averted, or diminished the severity of the relapse she had.

In regard to the total leucocyte counts: they vary of course, but their variations do not parallel those of the antihemolytic power of the serum closely enough to permit the deductions which may be drawn from variations in the absolute number of polymorphonuclear cells recorded. It is true that the red blood cell count may be going down, for a period, while the antihemolytic power of the serum and the absolute number of polymorphonuclear cells is increasing. Such a condition under ordinary circumstances does not endure, however; either the red blood cell count will start to improve, or these other factors will change and become worse. Owing to lack of time, I did not include anything in this report except data to illustrate the parallelism existing between the changes in the antihemolytic power of the serum and in the absolute number of polymorphonuclear cells.

This leads us to the answer to Dr. Pepper's question. Is not the rise in the polymorphonuclear count merely an indication of improved bone-marrow function? It probably is. It is our working hypothesis at present that the same mechanism causing the hemolysis also inhibits bone-marrow function; and therefore any change in conditions for the better would result in increased bone-marrow function. This improvement becomes apparent first by an increase in the polymorphonuclear count. In support of this hypothesis we have as yet, no proof.

Dr. Jones asked some questions that appear to me to emphasize an important point. In deciding upon a transfusion in pernicious anemia, all the features of the case must be considered carefully in relation to each other. The features presented in this report have no more weight than any of the others; they are, in themselves, merely an aid to judgment in situations of this sort.

Dr. Crawford raises the question of diagnosis in pernicious anemia. One must consider the anemia in this disease only as a symptom in a complex syndrome. Almost similar blood pictures may be seen in other conditions: congenital hemolytic icterus, syphilis, and even in a severe secondary anemia of long standing and slow development. A leukopenia with diminished myeloid cells is a very important feature in the blood picture, and I should hesitate a long time before diagnosing pernicious anemia in the presence of even a mild leucocytosis. An achylia is also a very important finding. Many, indeed most, patients having an achylia, do not have pernicious anemia, and probably will never develop it; but I have never seen a case of pernicious anemia that did not have an achylia gastrica.

Dr. Maclachlan asked about reticulated red blood cells. We counted them, but can draw no conclusions because our counts were not made systematically enough. We did feel that increase of the reticulation in the red blood cells indicated an increase of bone-marrow function. I would think, therefore, that the reticulated cells would probably increase in number with just about the same regularity as the polymorphonuclear cells.

OBSERVATIONS ON THE TREATMENT OF PERNICIOUS ANEMIA*

A. H. COLWELL, M.D.

PITTSBURGH

The transfusion of human blood has an established place in the treatment of anemia. Its greatest usefulness is in the replacement of large blood losses resulting from acute hemorrhage following traumata or other causes. That blood transfusions are of distinct value in the treatment of pernicious types of anemia, is still held by a considerable number of internists, though it must be admitted that many question this. However, the voluminous literature on this subject bears witness to the universality of the use of this method.

In pernicious types of anemia, human blood may be transfused either in large volumes to replace blood loss of the patient, or in small doses designed to stimulate blood regeneration. It is now rather generally accepted by those who employ this method of treatment that small, stimulating doses more often repeated are of greater value than single large doses, the average small dose being probably about 250 c.c. However, as recently as last year, Bowcock[1] reports the treatment of three cases of pernicious anemia given total doses of from 8 to 11 litres of blood in amounts ranging from 250 to 900 c.c. Forscheimer[2] and Bernheim[3] refer to the use of much smaller doses of blood given subcutaneously or intravenously in the treatment of pernicious anemia, the amounts mentioned varying from 5 to 50 c.c.

This report deals with eleven cases of pernicious anemia treated by the intravenous administration of small amounts of citrated human blood. Between twenty and forty c.c. of blood were used, the average single dose in 105 transfusions having been 30 c.c. The doses were repeated every three or four days, the average number in a series having been nine. The average total dose of blood in a given series was 220 c.c.

The method was made as simple as possible. Ten c.c. of 1.5 sodium citrate in normal saline are drawn into a 50 c.c. glass syringe. A vein of the donor is then punctured and the syringe filled to the 50 c.c. mark. The syringe is then agitated to insure thorough mixing, a needle of smaller caliber attached and the contents injected as slowly as possible into the vein of the recipient. The initial dose is arbitrarily set at 10 c.c. to detect, if possible, any tendency of the recipient to develop unfavorable reactions. Typing of bloods of recipient and donor was always done, and when possible, cross agglutination tests also. Records of hemoglobin and red cell counts were made before, during and after transfusions.

An analysis of the results noted is presented in an accompanying table. In the eleven cases, the diagnosis of pernicious anemia was the only diagnosis in seven, and there were other associated conditions in the remaining four. At some time or other during the period of observation, signs or symptoms indicated involvement of the spinal cord in every case. Two patients evidently had aplastic types and no response whatever was obtained except marked fluctuations in hemoglobin in one (Case No. VII). In one patient (Case No. VI) such a severe reaction occurred after the third transfusion that the procedure was discontinued. Another patient (Case No. II) was given transfusions over three different periods followed each time by improvement. In the eight patients who responded favorably there was subjective improvement coinci-

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

TABULATED CASE REPORTS.

Case Number.	NAME.	Age.	Initial Symptoms.	Cord Involvement.	Transfusion Begun.	Blood Before Transfusion.		Blood After Trans.		Transfusion Ended.	Number Trans.	Average Dose.	Total Dose.	Reactions.	Additional Diagnoses.	Present Status.
						HGB.	R. B. C.	HGB.	R. B. C.							
1	Mr. F. W. F.	45	Paresthesia of hands, gen. weakness	Yes—Moderate paresthesia	1-19-21	35	1,700,000	90	4,660 000	3-1-21	4	40 c.c.	160 c.c.	One moderately severe.	None	Dead—11-23-21.
2	Miss A. M. ..	45	Gen. weakness, dyspnea	Yes—Late moderate ataxia	2-28-21	30	1,180,000	96	3,490,000	4-29-21	9	20 c.c.	175 c.c.	Slight chill once	Chr. aortitis, chr.myocard. deg., infection exhaus. psychosis	Dead—5-23-22.
3	Mrs. K. K. ..	70	Dyspnea, weakness	Yes—Late moderate paresthesia	10-8-20 3-31-21 7-16-21	40 32 40	1,800,000 1,100,000 1,470,000	62 55 62	3,000,000 2,770,000 2,310,000	12-8-20 5-17-21 9-22-21	4 10 8	25 c.c.	160 c.c. 200 c.c. 160 c.c.	Slight chill twice	Chr. dental infection.	Dead—11-11-22.
4	Mrs. M. B. ..	61	Dyspnea, weakness, Paresthesia	Yes—Mild paresthesia	8-11-21	45	1,230,000	75	3,300,000	10-6-21	13	20 c.c.	260 c.c.	None	None	Improved.
5	Mrs. B. W. ..	45	Weakness, dyspnea	Yes—Paresthesia, late ataxia	8-26-21	48	1,400,000	75	2,750,000	11-3-21	4	53 c.c.	215 c.c.	None	None	Improved.
7	Mrs. E. P. ..	42	Weakness, diarrhea, abdominal pain	Yes—Paresthesia	3-16-21	50	1,900,000	76	1,690,000	4-23-21	9	20 c.c.	180 c.c.	None	Chronic ulcerative colitis	Dead—10-10-21.
8	Miss M. G. ..	52	Ataxia, weakness	Yes—Marked ataxia	2-21-22	62	2,935,000	75	3,875,000	3-21-22	9	30 c.c.	250 c.c.	None	None	Dead—9-1-22.
6	Mrs. E. S. ...	57	Paresthesia weakness	Yes—Marked paresthesia	5-7-21	50	1,835,000	47	2,150,000	5-18-21	3	20 c.c.	60 c.c.	One very severe	Cholelithiasis chr. cholecystitis	Dead—7-16-21.
9	Mrs. C. S. N.	58	Weakness, paresthesia	Yes—Moderate paresthesia ataxia	5-29-22	40	1,260,000	66	2,265,000	7-3-22	10	40 c.c.	370 c.c.	None	None	Much improved.
10	Mr. J. J. S. ..	49	Weakness, dyspnea	Yes—Slight late paresthesia	1-16-22	21	1,149,000	10.	504,000	3-28-22	14	30 c.c.	430 c.c.	None	None	Dead—4-3-22.
11	Mr. C. G. ...	53	Weakness, early paresthesia, late ataxia	Yes—Marked ataxia	7-2-22	45	1,710,000	75	3,070,000	8-4-22	8	40 c.c.	290 c.c.	None	None	Much improved.
	Averages	50½	....	....	....	39	1,584,500	66	3,141,000	....	..	30 c.c.	....			
	Av. excluding cases 6, 7, 10		....	....	....	41	71,571,500	73	13,649,000	....	9	......	220 c.c.			

dent with the increased blood values in each case. However, no change in any case was produced on the cord symptoms. All of these patients were first transfused at least one year after the appearance of symptoms of their condition. Eight were females and three males. The average age was 50½ years, the youngest 42 and the oldest 70. In 105 transfusions, reactions occurred five times. In Case No. III, twice a chilly sensation followed by rise of temperature to 100.5° F. followed transfusions of 20 c.c. of blood from donors whose blood before and after had been received without any such manifestation. In Case No. II a mild chill with temperature of 101° F. followed transfusion from a donor whose blood had been given previously seven times without reaction, but the time interval before this last dose was 10 days. In Case No. I a moderately severe chill with rise of temperature to 102° F. followed the injection of 40 c.c. of blood. This donor was a son of the recipient. The bloods were of the same type and cross agglutination tests were negative. The patient had taken this son's blood once without any reaction whatsoever. A lapse of 10 days occurred between the first and second transfusion from this donor, the patient having received in the interim, a transfusion from a daughter during the absence of the son. The third transfusion, all of which were of 20 c.c., was uneventful in every way during collection and injection of the blood. But one-half hour after the injection, the patient developed a very severe and prolonged chill, followed by rise of temperature to 103°, pulse rate 100, systolic blood pressure, previously averaging 110, dropped to

70, development of semi-stuporous condition, Cheyne-Stokes type of respirations, suppression of urine for 18 hours, marked prostration and the appearance of impending death. The patient finally recovered from this reaction but it was three or four days before she appeared as well as before this reaction. This method of treatment was discontinued. The occurrence is reported because of the very severe reaction to 20 c.c. of blood from a donor of the same blood type and with negative cross agglutination tests and whose blood had been previously taken in the same volume by the recipient without reaction. It may serve to emphasize that even small transfusions are not without danger. However, the writer believes that one severe reaction in 105 transfusions is much less than the incidence of such occurrences where large amounts of blood are used.

Blood transfusion is of course, only a palliative measure, and in no more able than any other method of treatment to affect the eventual fatal termination of this disease. The writer is unable to accept the belief held by some that pernicious anemia cases that receive transfusions die sooner than those not so treated. Such an opinion seems untenable when one considers the great variability of the progression of the disease in different individuals, and the fact that transfusion is practically always resorted to when other measures have failed and the condition of the patient's blood is so poor that life is not maintained with comfort.

The average blood findings before and after transfusion present some interesting comparisons. Recalling that Case No. III was transfused during three different periods, a total of 13 series of transfusions is considered. The average findings were:

Before transfusion: Hgb. 39% (Sahli), R. B. C. 1,584,500.

After transfusion: Hgb. 66% (Sahli), R. B. C. 3,141,000.

Average increase: Hgb. 69%, R. B. C. 104%.

If the two aplastic cases (No. VII and X) and the case No. VI in which transfusions were discontinued are excluded, the figures are even more striking:

Before transfusion: Hgb. 41.7%, R. B. C. 1,571,500.
After transfusion: Hgb. 73.1%, R. B. C. 3,649,000.
Average increase: Hgb. 75%, R. B. C. 132%.

From these observations it seems not unreasonable to conclude that transfusion of human blood in the treatment of pernicious anemia is useful in stimulating remissions, and that small doses frequently repeated are of as great value as larger ones and less dangerous.

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DISCUSSION

Dr. John A. Lichty (Pittsburgh): Pernicious anemia is a fatal disease. In fact, if the patient does not die we are doubtful of our diagnosis. The treatment of pernicious anemia, with our present knowledge, has relation to the point as to whether we may do something which will cure the patient, or if we cannot, whether we can do something that will at least prolong the life of the patient or make him more comfortable. So far no one has essayed to say that he has found a cure for pernicious anemia.

Dr. Colwell has given us a very excellent illustration of the effect of transfusion, at least in so far as the immediate results are concerned. He very wisely allows us to draw our own conclusions.

I have now tabulated 115 cases which I have seen from the time I left "Blockley" (the Philadelphia Hospital) in 1894 until the present. Some were seen in consultation only. Many of them were treated by me and I have full records on at least 49. The records of the others are not completed. They have not died yet, or they have passed from observation. Of these 115 I have one that is living after fifteen years, so far as I know. He was cured apparently by an attack of typhoid fever and by living in a higher altitude. He is in Colorado now. I have three who lived eight years. One was splenectomized and transfused. The other two were only transfused. But these three are now also dead.

In the general treatment of these cases I have gone down through everything done since 1894—arsenic, including arsphenamin, hydrochloric acid and pepsin, forced feeding, irrigation of colon, calcium carbonate, glycerine, or whatever has been suggested from time to time, and finally transfusions which I have had done routinely now for the past eight or ten years.

Such a paper as Dr. Colwell has presented is a very necessary paper because it enables us to estimate the value of a certain treatment which is now popular and extensively employed. Transfusion entails a great deal of trouble to the patient. It is not an inexpensive procedure. Frequently the whole family is concerned. It entails a great deal of technique. Even though carefully done there is at times a chill and fever, and there may be bad results, sometimes a fatality. So it is necessary to have just such a paper as Dr. Colwell has presented to-day because we should look into this and see whether it is worth while to subject the patient to the expense and inconvenience, and ourselves to the trouble.

Now, of the 49 cases of which I have definite records and who died, 14 were transfused and 35 were not transfused. The 14 are of the more recent and the 35 of the earlier cases. Of the 115 cases, 27 in all have been transfused, 14 died, and 13 are still living but will die later. As to the results of these cases that were transfused I can only give impressions, because we do not know the possible course of the case from the beginning.

A case of pernicious anemia comes to you and after you make the diagnosis, whether the case is recent or of long standing, transfusion is undertaken. Most of my cases came to me two and a half years after the anemia had begun. From the history, blood picture and physical findings, one has a concept as to how long that patient may live. Suppose you get a patient who should probably live three years. The question now is, if transfusion is done, is that patient going to live longer than three years or is he going to die sooner? I am sorry to say that the impression I get from my work is that he will die sooner than the three years. It seems that the transfusions rather hurry the patient through the remissions due him, more rapidly. For that reason I question whether we should go on with transfusion, at least as a routine treatment.

Now this opinion comes from a long experience in my own work. My patients, since I am transfusing, do not seem to have the long intervals of well-being that they used to have when I used only hydrochloric acid and pepsin and arsenic, with hygienic measures. Probably I see more difficult cases now than I used to see. But I do not see the patients who had the long remissions or long intervals when they seemed to be well.

So it appears to me, as my friend Dr. Maclachlan expressed it the other day, that the patient is due just about so many remissions, and if we begin to transfuse we have them just a little more rapidly. Whereas if we let him alone or treat him as we did before the era of transfusions he will live longer. This is my impression.

It is a wonderfully attractive thing to transfuse and see such results as Dr. Colwell has shown, because you can demonstrate the results to the patient and to his friends so easily. The immediate results tabulate beautifully. It is inspiring because the patient is immediately better. But, after all, is he going to live longer? I do not believe that he is.

Just one point, and that is the fact that we don't know what causes pernicious anemia, and yet we do some very definite things for it, such as transfusion. Suppose a surgeon has a case of internal hemorrhage from a ruptured spleen, for example, and the patient is very ill and in collapse. For some reason he decides not to operate at all, but attempts to save the life of the patient by transfusing instead of by opening the abdomen and doing a splenectomy. I am sure he would not feel well satisfied by such a procedure. I do not get any more satisfaction from transfusing in pernicious anemia than I believe the surgeon would get from transfusing routinely in the case of unknown internal hemorrhage.

I believe transfusion in pernicious anemia will be done less frequently in the future and that we can get just as good, or probably better results from the old line of treatment. Only in the very grave cases where there is immediate danger will it be indicated and justified.

Dr. J. Slater Crawford (Ingram): I was very much impressed and gratified to hear Dr. Litchy's remarks on this paper. He used the words, "I am impressed," or "I have the impression." Now that is an important thing for a man to say when he discusses pernicious anemia. He has an *impression.*

In private practice I have had six cases of pernicious anemia that I diagnosed. I may have had more. Of those cases four of them were transfused at intervals and, while the immediate benefit was marked, in most cases the ultimate effect I believe was bad. I believe, with my limited experience, that a man with pernicious anemia gets better as he is able to take arsenic, and nothing else.

Dr. Judson Daland (Philadelphia): Unfortunately, I did not hear Dr. Colwell's paper, as I was discussing a paper in the Section on Surgery.

Pernicious anemia is sometimes due to intestinal toxemia, focal infection, and many years ago Doctors Osler and Henry reported cases which led them to believe that atrophy of the gastric tubules was a cause, although in the light of our new knowledge we now believe that this atrophy is a secondary manifestation. In the majority of cases of pernicious anemia no definite cause can be ascertained and, therefore, as the etiology is unknown, the treatment is purely symptomatic, precisely as is the case in leukemia.

Symptomatic treatment is always uncertain so far as results are concerned, and differs from time to time in accordance with experience. There is no doubt that arsenic, more especially the organic preparations, has proved of value in certain cases. In my judgment, transfusion of blood has proved of temporary value and prolongs life.

Dr. R. R. Snowden (Pittsburgh): I feel that the most encouraging feature about this discussion so far has been the open-minded attitude on the part of everybody. There is always a tendency to take up a new line of therapeusis and hail it at first as a cure-all; this is especially apt to be the case in such an obscure and chronic disease as pernicious anemia. Thus was salvarsan hailed several years ago. Many cases were helped and it was thought a cure had been developed; but time and experience has shown its doubtful value. Recently transfusion has again received wide attention and the open-minded attitude on the part of all present in considering this procedure is evidence of a fine spirit.

Dr. Colwell's paper is especially valuable because he is so thoroughly familiar with all phases of the subject. His studies are not based on cases selected from hospital records, examined and treated by different physicians. The cases he has presented were, in every instance, examined, treated and followed up by himself. He has analyzed the results of all this work in a most sane and open-minded manner. Consequently, his conclusions are of real value, these conclusions being that transfusion helps the patient so far as subjective feelings are concerned; it gives the physician something to make use of, but it apparently does not prolong life.

Dr. John W. Boyce (Pittsburgh): I cannot discuss pernicious anemia. Diagnosis is too difficult for me and always escapes me. But there is a point of medical psychology which the Chairman raised that is very interesting. Here is a body of physicians altogether uncertain as to whether the latest standard treatment prolongs life or shortens it.

I should like to call your attention to the fact that this situation is not at all new. Twelve years ago I had some interest in pernicious anemia for certain reasons and at that time the use of arsenic was so universal that I assumed there was some reason to believe it was beneficial. At that time I came in contact with Richard Cabot and was amazed and dumbfounded to hear him say that arsenic had no effect whatever. I put it down as "Cabotism." But now twelve years have passed and everybody abandons arsenic. Apparently Cabot was right and everybody else was wrong.

In the case of a method where we seem to be evenly divided and very open-minded as to whether it is benefiting the patient or hurting him when we apply it, I think we are not as bad off as twelve years ago when practically all were on the one side of the question.

Dr. J. S. Crawford (Ingram): Dr. Cabot told me seven years ago that arsenic was the only drug to use for pernicious anemia.

Dr. Edward J. G. Beardsley (Philadelphia): The radical differences of opinion concerning the value of blood transfusions in pernicious anemia that we have heard expressed by these two distinguished clinicians might seem amusing if the potential results of such differences of opinion were less serious.

It seems to the Chairman most unfortunate if, because of the discussion of this suggestive and valuable paper, any victim of pernicious anemia were deprived of the possible good result of a blood transfusion. No one, as far as I am aware, considers that transfusions result in the cure of pernicious anemia. The consensus of medical opinion has been that this form of therapy does, in many instances, add to the patient's comfort and possibly prolongs life. Have we, at present, any more valuable treatment to suggest in the presence of this dread disease?

A physician who has seen good results follow the transfusion of blood in the treatment of this disease is not more likely to mistake coincidence for cause and effect than is the therapist who has been disappointed in the results derived from such treatment.

It is only fair to mention an experience that convinced me of the value of blood transfusion in even apparently dying cases of pernicious anemia. Several years ago I saw, in consultation with Dr. J. Harris Underwood, of Woodbury, N. J., a man aged 64 who appeared in a dying condition. The clinical history, the results of repeated blood examinations and his cachexia indicated the terminal stage of a pernicious anemia. The patient was unconscious and both the attending physician and all attendants thought that the end was near. Although the patient's family seemed perfectly aware that nothing could be done to save his life, they did express a great anxiety and hope that a treatment might be instituted to aid in prolonging life until the arrival of a relative from a distant point.

With the patient in deep coma and showing typical Cheyne-Stokes respirations there seemed little hope of success, but a transfusion was hastily performed with citrated blood in order that the patient's relatives could feel that a final effort had been made to meet their wishes. To the astonishment of all concerned and to the joy of the family the patient became conscious a few hours after the transfusion and was able, a few weeks later, to resume his place in the business world. That a remission might have taken place without the stimulation brought about by the transfusion is remotely possible but, under the conditions that existed, such a change would have been most unlikely.

An opportunity presented itself later to make a careful study of the blood smears from this patient and they revealed the classical characteristics of the disease, including marked poikilocytosis and the presence of megaloblasts and other nucleated forms of the red cells.

Although I have never seen as startling evidence of the value of transfusions before or since this gratifying experience, I have seen many instances where the method of treatment appeared to be entirely justified by the resulting improvement in the patient's condition.

It would be a real misfortune, in my opinion, if the members attendant upon this Section should return to their homes with the idea firmly fixed in their minds that blood transfusions, properly performed, tend to hasten the death of pernicious anemia patients. This is not the experience of the men who use transfusions routinely in the treatment of pernicious anemia, and I shall hope that Dr. Lichty has been mistaken in the impression that he obtained from reviewing his experiences with his group of cases.

EYE SYMPTOMS IN A CASE OF OXYCEPHALY; WITH REPORT OF AUTOPSY*

CHARLES E. G. SHANNON, M.D.
PHILADELPHIA

My purpose in presenting this case before the section is, first, because of the failure correctly to diagnose the condition prior to the patient's death, justifiable perhaps in view of the absence of any distinctive cranial deformity, which usually accompanies this disease; and second, because through the courtesy of Dr. Crawford, I am enabled to report in detail the findings of the autopsy.

Osler defines oxycephaly as a "cranial deformity associated with exophthalmos and impairment of vision." While eye lesions are not always present, yet the value of the definition is not lessened in the clinical sense. Various names have been given in the literature to this condition, such as "Turricephaly," "Turritum Caput" and many others; but the two names usually accepted and used interchangeably are 'Turmschadel" (Steeple Shaped Skull) and "Oxycephaly." The former refers to the milder form of deformity where there is no definite prominence or protrusion at the anterior fontanelle; and the latter to the severe form, with prominence at the anterior fontanelle. Fundamentally it seems proper to consider the two names as referable to the one condition differing only in the degree of the deformity.

CASE REPORT

J. B., white, married, aged 29, mechanic, was admitted to the eye ward of the Jefferson Hospital on June 19, 1920, suffering from headaches and impairment of vision.

Family History: Negative.

Personal History: General health good. Suffered from an attack of influenza January, 1920, but made a rapid and apparently complete recovery.

History of Present Trouble: About two months prior to his admission to the hospital, and three months after his attack of influenza, he began to complain of headaches which were relieved for a brief period with glasses secured from an optician.

June 1st, while driving an automobile, stated he saw double and immediately applied for treatment at the Methodist Hospital, where he remained for two weeks. Two days following his discharge, he came under the care of the Eye Staff at the Jefferson Hospital.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

Symptoms: Lowered vision, severe fronto-occipital headaches, associated with frequent attacks of nausea and vomiting.

Physical Examination: Fairly well nourished adult.

Head: Examination of the patient revealed no peculiar shape of the head, although it seemed somewhat larger than normal. Unfortunately no measurements were taken. The absence of any apparent cranial deformity caused us to ignore the possibility of oxycephaly as the cause of his condition, although he did present the two other so-called cranial signs that usually bring these patients to the ophthalmologist; namely, exophthalmos with divergent strabismus and impaired vision.

Examination of Nose and Throat by Dr. W. Deardorf showed a deflected septum to the left which extended up and interfered with the drainage of the left frontal sinus. Transillumination revealed the sinus rather cloudy.

Throat: Negative.

Chest: Emaciated; expansion, fair; clear.

Heart: Normal.

Abdomen: Negative.

Urinalysis: S. P. 1013; alkaline; no albumin or sugar; no casts.

Wassermann: Negative.

Spinal Fluid: Negative;, Cell-1; globulin, negative; sugar, positive.

Neurological Examination by Dr. Gilpin: "Knee jerks present, no ataxia of gait or station; no lost motion. Neurologic examination for signs of brain disease is negative. Patient bright and intelligent. From spinal fluid report there is some pressure and would advise drainage of about 5 c.c. from spinal canal every third day."

Eyes: Vision O.D. 20/30. O.S. 20/40. Pupils 4 mm., reactions normal; marked exophthalmos. Patient stated exophthalmos had existed for many years. Slight ptosis of both lids O.S. divergent. Von Graefe sign not present. Fields contracted moderately and concentrically.

Ophthalmoscope: Both eyes. Papillae swollen between 3-4 D; numerous white patches throughout fundus; veins very full and tortuous and buried in places by exudate and edema. Arteries moderately tortuous.

X-Ray Report by Dr. Willis F. Manges: "The skull generally seems to be fairly normal in thickness. Bone seems to be lacking in density, especially in the anterior half of head. The sella turcica may be slightly enlarged. Posterior clinoids are rather long and slender. The convolution depressions are not exaggerated. The skull sutures are more tightly closed than we are accustomed to seeing. No evidence of intracranial lesion. There was a slight clouding of the left frontal sinus. No other evidence of sinus infection."

Following the recommendation of Dr. Gilpin, 5 c.c. of spinal fluid were removed on June 22d, 30th and July 3d, with pronounced relief to the patient from all his symptoms.

Patient was discharged on July 3d, for a few days, as he was feeling much better and desired to be home over the 4th of July. He was readmitted to the eye ward on July 7th. His condition for the succeeding two weeks remained unchanged except for the temporary relief secured through lumbar puncture every third day. On July 19th he was transferred to the medical ward and a tentative diagnosis of encephalitis lethargica made. Two days later the patient was discharged at his own request. Dr. Charles Heed, at this time, found no change in the appearance of the fundus since previous examination. On July 30th the patient was brought into the hospital in an unconscious state and died within a few hours.

"Oxycephaly," while primarily an anatomical condition, should claim the attention of the ophthalmologist by reason of the grave ocular changes frequently noted in the course of the disease. Von Graefe[1] in 1886, reported the first case in a male child, eight years of age, whose head was high but narrow transversely. He states that the vision gradually became worse and upon ophthalmoscopic examination double choked disc was noted, it being a case of mild degree.

Mackenzie,[2] over half a century ago, called attention to the relation of hydrocephalus and ocular disturbances. He referred to "the depression of the orbital roof, the shallow orbit, the exophthalmos and visual disturbances." Since then many cases have been reported, the great majority of which have been of the so-called turmschadel type, merely tall heads with optic nerve atrophy of varying degree. Ordinarily, a cranial deformity, unless associated with impairment of vision, was given little attention; and yet a slight deformity, especially of the turmschadel variety, may occasion a grave ocular disturbance. According to Sharp,[3] not more than twenty typical cases of oxycephaly have been reported, i. e., of the severe turmschadel variety. All of them produced optic atrophy of varying degrees.

The three symptoms that bring the cases to the ophthalmologist are: 1, Exophthalmos associated with divergent squint and nystagmus; 2, impairment of vision; 3, cranial deformity. Exophthalmos is frequently pronounced. Patry[4] reported its presence in 50% of a series of cases. It is caused by shortening and flattening of the back of the orbit, the wing of the sphenoid being displaced posteriorly instead of externally.

Strabismus is often noted in these cases, generally of the divergent type, although cases of convergence have been observed. Nystagmus is frequent. Metzer[5] has reported twenty cases of mild turmschadel and among them eighteen presented exophthalmos, nineteen divergent strabismus, and nineteen nystagmus.

Impairment of vision is due usually to optic neuritis and atrophy. Dorfman[6] expressed the opinion from a study of his and other cases, that the early synostosis of the sutures causes neuritis followed by atrophy for which the increased intracranial pressure is responsible. Natanson[7] in his report of six cases further substantiated Dorman's theory as to the cause of the optic lesions. Behr[8] contends, however, that it is not the intracranial tension, but an anomolous position of the carotid artery pressing the optic nerve against the orbital roof at the inner end of the floor of the optic canal. Hirschberg and Grumnach[9] noted in their radiographic studies that in one of the cases the sella turcica was enlarged and they held that its condition was the cause of the optic nerve changes. Holloway (Proceedings of the Section on Ophthal., November 16, 1912) exhibited a case of oxycephaly in which the cranial deformity was not the true tower-skull type. In his case of oxycephaly there was divergent squint and impaired vision with well advanced atrophy on each side. The x-ray showed an enlarged and displaced sella turcica, indicating possible disturbance in function of the pituitary body. Fletcher,[10] in an interesting and exhaustive report, states that in his cases, at autopsy there was no closure of the optic foramina, no thickening of the meninges and no sign of rickets. Manz and Podfick believe the optic atrophy is brought about through compression by a bony narrowing of the optic foramina. Wiess, Brugger and Vortisch, however, found no such construction of the foramina at their autopsies. Sharpe, in his report of four cases, believes that the gradually increasing intracranial pressure is the cause of choked disc and secondary optic atrophy. In my case, as reported by Dr. Crawford, who conducted the postmortem, the optic nerves fitted closely in their foramina, but there was no narrowing from osteitis and hyperostosi. Terrien reports the case of a young girl with marked tower skull, exophthalmos and optic atrophy. He states that the symptoms are caused by an overfilling of the veins of the skull and interference with the return circulation.

Cranial Deformity: The consensus of opinion is that the cranial deformity is due to an early synostosis of the occipital, parietal and temporal bones, allowing the brain to expand only in the anterior part of the skull. Sharpe contends that gradually increasing intra-ocular pressure results in choked disc, followed, if prolonged, by secondary optic atrophy. Conflicting views are advanced, however, for the cause of the early synostosis. Some observers, notably Vortisch and Virchow, believe that inflammation of the meninges during fetal life brings about premature synostosis. Bertolotti[11] is authority for the statement that it is distrophy of rachitic origin. He states that rickets was found in 85% of his cases. Krauss points out that while many authorities deny the presence of gross signs of rickets, records of late walking are suggestive of that disease. Sharpe, in his report, observed no sign of rickets. Cases reported by Hirschberg, Fletcher, Dodd and others, showed no evidence of rickets. Rickets was not observed in my case.

The incident of sex shows that oxycephaly is far more common in males than females, the proportion being about 5-1. Heredity apparently plays small part in its causation. Syphilis and traumatism are etiological factors. It is generally noted that patients suffering from the milder form of the disease are bright and intelligent. Patry cites as an example of tall heads of the turmschadel type, the skull of Sir Walter Scott, William Humbolt and Michael, all of whom are remarkably intelligent.

The roentgen ray picture is usually characteristic. The middle and posterior fossae are nearly on the same level. The sella turcica is deepened and widened usually. The sinuses are almost obliterated, especially the frontal and ethmoidal. The greater wings of the sphenoid are flattened out and not so vertical. There is a marked thinning of the bones of the cranium and formation of digital depressions caused by the pressure of the convolution of the brain. Occasionally, in the severe types, notable bulging at the anterior fontanelle is noted, but usually it is not sufficiently large to attract attention.

Treatment of these cases is somewhat problematical.

Lumbar puncture, as in my case, may give temporary relief, but it is attended with the same danger as in brain tumor. The cerebellum may be sucked into the vertebral canal. Sharpe reports very favorable results of decompression, subtemporal, in three out of four cases. Decompression has been recommended by Natanson, Behr, and others. He believes this operation in early cases will relieve the headaches and possibly prevent the onset of optic atrophy.

Dock,[12] is inclined toward trephining, with ventricular puncture as the most promising operative procedure. Decompression, however, may be followed by a large cerebral hernia and this fact, as pointed out by Holloway, should be carefully considered.

17th and Walnut Sts.

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DISCUSSION

Dr. William Zentmayer (Philadelphia): The case of oxycephaly reported by Dr. Shannon is clinically atypical in that it presents neither the characteristic deformity of the skull nor the "digital markings" shown in such cases in radiograms of the bones of the skull, particularly marked in those that form the cranial vault. That even mild cases of oxycephaly may show these markings is well illustrated in a case pictured by Moore in his "Medical Ophthalmology." Furthermore, progress in the optic nerve lesions usually ceases about the seventh year, whereas in this case there was a papillo-edema with retinal changes at the age of 29. The postmortem histologic diagnosis, made by Dr. Crawford, of chronic diffuse nephritis and passive congestion of the liver, suggests that the fundus lesions present may have had a renal origin.

Occasionally cases of oxycephaly are seen, with symptoms not assignable to the deformity of the skull. I recall a boy with a moderate degree of oxycephaly who had zonular cataract, and in the above cited cases of Moore's lamellar cataract was the sole ocular symptom. Mehner believes that the probable reason there is no relation between the degree of deformity of the skull and the severity of the ocular symptoms lies in the time at which synostosis occurs. If it takes place during the first years of life, the most active period in the growth of the cranium and of the brain, the effect must be greater than during the third to the seventh year of life.

Much interest attaches to the pathogenesis of the optic nerve affection. The premature ossification of the coronal suture leads to elongation of the skull backward and upward. The forebrain remains rudimentary. The disturbance of vision begins in the first years of life *pari passu* with the growth of the brain and usually ceases by the seventh year with the cessation of active growth of the brain. These facts indicate that the pathogenesis of the optic nerve affection is the increased intracranial pressure resulting from the growth of the brain in an unyielding bony case.

According to Mehner's observations, development of tower skull may arise from premature closure of either the coronal or the sagittal suture.

Of the other views concerning the cause of the optic neuritis, that of a serous meningitis being the cause is the only one that seems at all plausible, but there is little evidence that meningitis has been present in any of these cases, though in an interesting case reported by Xilo this year, he believes that a slight meningitis acting upon the rachitic bones had stimulated ossification in the margin of the sutures and so caused cynostosis.

According to Mehner the more rapid growth of the brain in boys may explain the greater frequency of tower skull in males. True horizontal nystagmus was observed in 40% and nystagmoid movements in terminal position in 20% of Mehner's cases. A typical finding was a triangular indentation over the orbital arch; this was constant. The roentgenograms furnished no reliable indication as to whether or not the optic nerve was injured.

Regarding the relation of rickets to the affection, it is of interest to note that lamellar cataract, which is frequently associated with rickets, is sometimes met with in oxycephaly. In one of my own cases it was present, and also in Xilo's case, but Moore makes no mention of it in the case which he reports.

Decompression, if performed early, should be effective in relieving the abnormal intracranial pressure on the optic nerves and is safe enough to recommend. In Xilo's case large portions of the parietal and temporal bones were removed from the right side, leaving the periosteum. The right eye showed papillitis which improved after the operation. The left eye was blind from optic atrophy before the operation was done.

Dr. B. L. Crawford (Philadelphia): As a rule when a pathologist makes a diagnosis, he has something to show for it, but in this instance we were unable to save the entire skull for demonstration. The diagnosis was based largely on the changes in the skull bones.

From the history of the vague cerebral symptoms and the eye changes, we fully expected to find a brain lesion at the autopsy. The skull was found to be extremely thin, especially the frontal and parietal bones but the occipital bone was markedly thickened in the region of the occiput. The inner surface of the cranial bones was irregular and rough, showing numerous depressions corresponding to the convolutions of the brain. The brain was very pale, the superficial vessels empty, and there was a marked groove on the under surface of the cerebellum caused by the pressure on the margin of the foramen magnum, all indicating increased intracranial pressure. However, the ventricles were empty and the brain was carefully sectioned but no lesion was found.

The organs of the abdomen and chest were practically normal except a slightly hypertrophied heart and a mild degree of chronic change in the kidney.

From a retrospective view of the case, considering the clinical symptoms, such as persistent headache, relieved by lumbar puncture, eye symptoms and autopsy findings, there is no doubt in our minds that the case is one of oxycephaly.

Dr. Shannon (in closing): I want first to express my deep appreciation to Drs. Crawford and Zentmayer for their discussion of my paper. My rôle in connection with the presentation of the case is a minor one. Dr. Crawford has borne the burden and should receive full credit for making the diagnosis.

I wish to bring out one point in connection with the x-ray report. This apparently did not show the exaggerated convolution depressions which are usually found in these cases. However, the fact that Dr. Crawford in his careful examination of the skull did find these depressions leads me to believe that we are justified in making the diagnosis of oxycephaly.

Dr. Zentmayer, in his discussion, suggested that the eye symptoms in this case might be due to chronic interstitial nephritis. The fact that the patient exhibited choked disc, with a swelling of 3-4 D, would make it appear difficult to uphold this contention. Logically the eye symptoms would appear early in oxycephaly, but several authorities have reported cases in which they were not manifest until later in life.

REHABILITATION

My creed: To serve my fellow-kind,
The halt, the lame—to lend a helping hand, my vision to the blind,
My torch, a clear and steady flame,
I hold aloft to light the way,
O'er rugged cliffs to heights of fame,
Or lower levels where flowers of hope unfold;
Where children sing around the fireside glow,
And contentment hand in hand with labor go.

CARDIOSPASM*

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Illustrations drawn by the writer

The term cardiospasm came into medical literature in the dark days of esophageal surgery, that is before the advent of the esophagoscope, the x-ray and the fluroscope. It was essentially a clinical word. Gradually we have been able to learn a little of the pathological anatomy of the condition and we find that the name is a misfit in many instances. As far as my experience goes it shows that spasm plays but a minor rôle in cases of cardiospasm, stricture of the terminal part of the esophagus playing the major rôle. The whole intestinal tract reacts to irritation by intermittent and recurring spasm. Spasm is capable in the condition known as cardiospasm of making a bad matter worse. I feel strongly, however, that it seldom originates the condition.

For at least fifteen years I have been plodding along studying the esophagus in the dissecting room and in the clinic. Within the last three years my long task has borne a little fruit. I have accumulated thirty-seven casts of the adult esophagus and stomach and have successfully injected and dissected the esophagus and stomach in sixty babies born at term or near term. I have recently injected the esophagus and stomach of ten babies with barium sulphate in a watery solution and x-rayed them. As the injection mass remains fluid for a considerable time it is possible to carry on a certain amount of experimentation. For instance, the diaphragm can be forced up by injecting air into the abdomen, and then after letting the air out, air can be injected into the thorax, forcing the diaphragm down. This procedure has given interesting results. Again, the babies can be flexed or hyperextended at will and the influence of faulty posture and its correction studied. Here again positive findings were found. I am aware, of course, of the great gap between the dead and the living and have tried not to carry over too much from one to the other.

I shall first give briefly the summary of the findings shown by the casts and the injected babies. Then follows a statement of my conclusions arrived at in the paper, then the paper itself. The first part is anatomical, the second part more clinical. The anatomy has helped me greatly in interpreting clinical findings. Much of it was new, at least to me, within the last few years.

SUMMARY OF FINDINGS IN ADULT CASTS AND INJECTED BABIES

The findings shown by the adult casts are as follows: The upper edge of the left lobe of the liver often makes a deep crease in the front face of the esophagus. When this is present there is a spindle-shaped dilatation of the esophagus above it. The left crus frequently causes a deep impression on the posterior face of the esophagus and a sharp notch in the lower part of its left border. At times the left crus seems almost to strangle the terminal part of the esophagus. The terminal part of the esophagus showed a globular dilatation in four casts, and in five others the globular dilatation was surmounted by an annular string-like stricture. These strictures were all at or near the level of the upper edge of the left lobe of the liver. In four casts only did the esophagus lie on the left side of the vertebral column.

The findings in the babies were much the same as in the adults. The liver edge makes the same crease and the left crus notches the left side of the terminal portion of the esophagus. A spindle-shaped dilatation of the esophagus above the liver edge is common with or without actual creasing of the front face of the esophagus. Annular strictures at the level of the liver edge have not been found, but narrowing of the cardiac end of the esophagus has been found a number of times at birth. In two instances a stricture was found both at the cardia and at the pylorus. Stricture of the pylorus at birth has long been known. The presence of the associated stricture at the cardiac end of the stomach is a newer observation. In cases in which an operation for pyloric stenosis fails, an associated stricture at the cardia may be the cause.

In babies of the same weight the esophagus of one may be twice the caliber of the other. At birth the esophagus, relatively speaking, is much larger than in the adult, and it opens into the stomach more freely.

As strictures of the cardiac end of the esophagus are found at birth and as twists to the right and bends are also found, I have the feeling that in many cases the stage is all set at birth for future trouble. Cardiospasm is said to show itself first around twelve years of age. In the cases in which the condition is due to a stricture this may have been present from birth and closed down slowly. Some form of prenatal pathology not yet understood must be invoked as its cause. Prenatal pathology is gradually getting its place in the textbooks, and invoking it as an explanation is not looked upon so much askance as of old.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

†Assistant Professor of Laryngology, Harvard Medical School. Chief of Throat Service, Massachusetts General Hospital and Massachusetts Charitable Eye and Ear Infirmary.

CONCLUSION

The conclusion drawn in this paper is that the term cardiospasm is in most cases a misnomer. The great causes of so-called cardiospasm are stricture of the lower end of the esophagus and displacement. These two causes often act together. Spasm can make a bad matter worse but it does not originate the condition.

THE VERTEBRAL BED

According to the formation of the bodies of the vertebra the esophagus has a secure or an insecure bed. If the vertebral bodies are flat and broad the esophagus rests securely. If, however, as often happens, the bodies of the thoracic vertebræ are narrow and pointed the esophagus is readily unseated. It practically always twists or falls to the right. I have found but four instances in which the esophagus lay on the left side of the vertebral column. The descending aorta hogs the left side of the spine. The backward pressure of the heart steadies the esophagus from the front. Once the esophagus has left its bed the pressure of the heart prevents it from getting back.

THE SUBDIAPHRAGMATIC ESOPHAGUS

Dissection shows that there often is no subdiaphragmatic esophagus. In such cases the edges of the crura lie on the stomach itself. The anterior crus is thin and may even be membraneous. The posterior or left crus is sturdy and makes a marked crease on the posterior surface of the esophagus and notches its left border. (See Figure No. 1.)

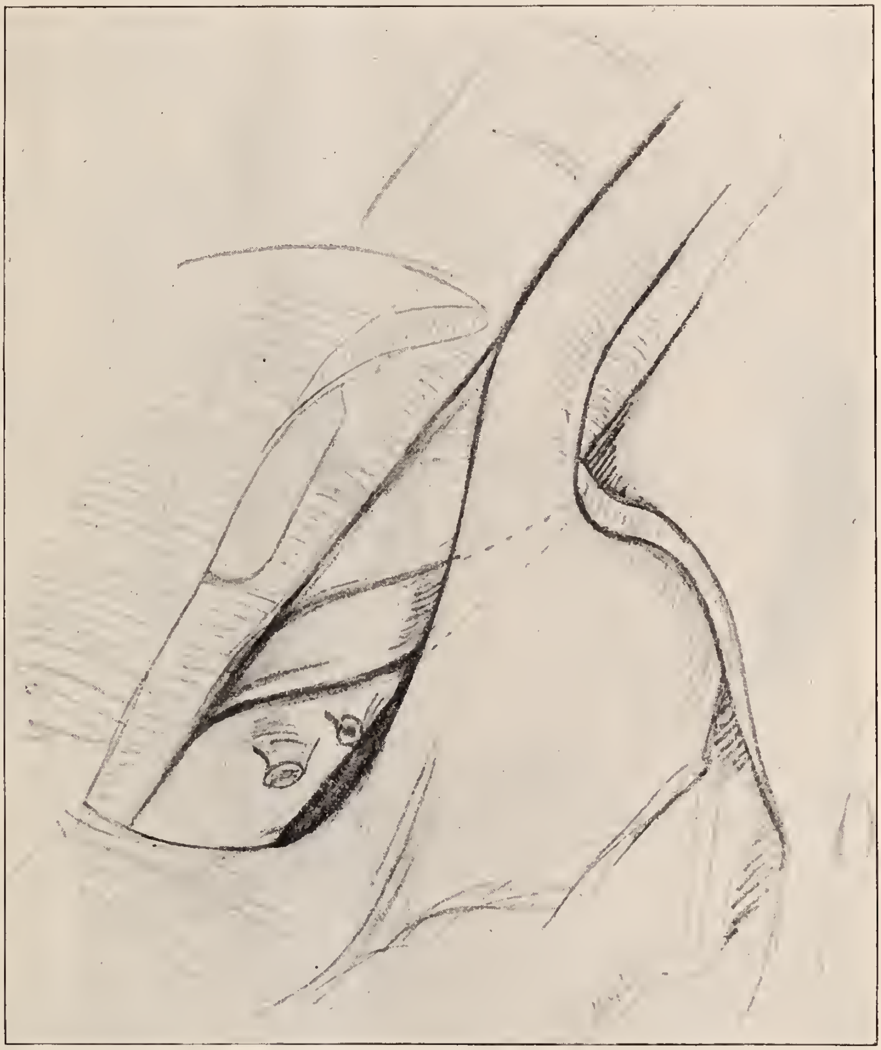

Figure No. 1. The Subdiaphragmatic Esophagus.

Drawing from a dissection of an adult cadaver to show the relation of the left crus to the esophogus and to the fundus of the stomach. Notice that the left crus lies on the fundus of the stomach and that there is no esophagus below it.

The right crus has been removed. Its left edge was parallel and flush with the left edge of the left or posterior crus.

In this subject, therefore, there is no subdiaphragmatic esophagus. In six subjects three others were found in which the crura had the same relationship as the one pictured. Thus it appears that the subdiaphragmatic esophagus is not constant.

THE CONE OF THE DIAPHRAGM

The two halves of the diaphragm meet in the midline and just in front of the spine dip down in a cone, the tip of which is made by the crura. Through this cone runs the terminal part of the esophagus, and the cone intervenes between the esophagus and the liver. The cone of the diaphragm is packed with loose connective tissue. It binds the esophagus more firmly on the front and sides than behind. The cone of the diaphragm acts as a sleeve which keeps the terminal part of the esophagus in line. With falling of the diaphragm the cone of the diaphragm opens up and flattens out. When this happens the terminal part of the esophagus is set afloat. The esophagus bobs about aimlessly on the flattened diaphragm and turns and twists as it pleases.

THE LIVER TUNNEL

The terminal part of the esophagus is not only surrounded by the cone of the diaphragm but it passes through a tunnel of surrounding liver. Between the esophagus and the liver the cone of the diaphragm, and the crura which make the point of the cone, of course, intervene.

The liver is chiefly responsible for the shape of the lower end of the esophagus. According to the closeness of the investing liver the terminal part of the esophagus is either trumpet-shaped or cone-shaped. The lower end of the esophagus has liver on the right, in front, and in many cases a thin tongue of liver hooks round its left edge like a sickle. Behind the esophagus is the descending aorta which separates it from the vertebral column. The liver tunnel, as studied on the cadaver, varies greatly in length in different subjects. Owing to the extreme size of the liver at birth the liver tunnel in the baby is much longer and wider than in the adult. (See Figure No. 3.)

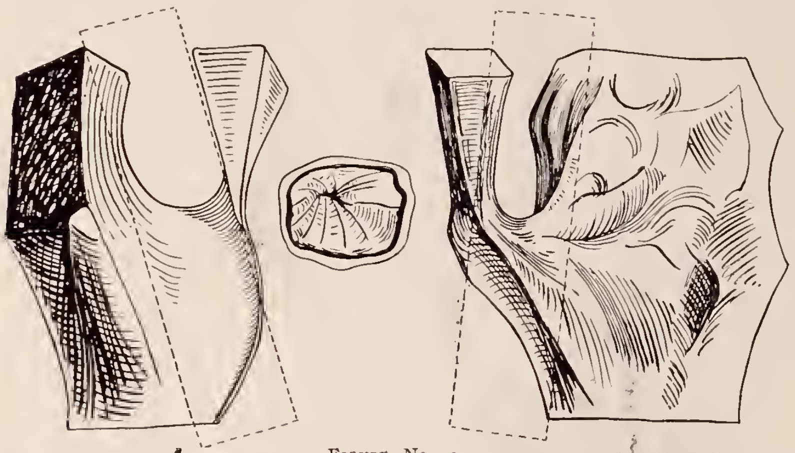

Figure No. 2.

Wax reconstruction from frozen sections of the terminal portion of the esophagus of an adult cadaver.

The first cut shows the esophagus from behind. The terminal portion of the esophagus is divided into a vertical part and a horizontal part. The vertical part or arm is pyramidal in shape and ends in a point. Below this the esophagus turns on itself to the left and makes the horizontal arm of the terminal portion. The dotted lines represent the posterior or left crus as it crosses the esophagus from behind. Notice that it lies behind the horizontal arm and that where it crosses the esophagus the vertical arm comes to a point.

The second large cut shows the same reconstruction from the front. The vertical and horizontal arms of the terminal portion of the esophagus are shown as before. The dotted lines again show the position of the posterior crus.

The small central cut shows the lumen of the vertical arm. The surgical hiatus occurs at the junction of the vertical and the horizontal arms of the terminal portion of the esophagus. When the horizontal arm of the esophagus is closed the surgical hiatus appears as a small round central opening. When the horizontal arm is open the hiatus becomes an oblique slit which follows the direction of the left crus and into the lumen of which the left crus often makes a distinct mound.

THE LOWER END OF THE ESOPHAGUS AS SEEN IN FROZEN SECTIONS

In frozen sections the esophagus is seen to end in a point or in a slit in the middle of the diaphragmatic cone. The slit has the position characteristic of the hiatus, that is, it slants upward and to the left. When the esophagus ends in a round opening instead of a slit, the opening is to the right of the center. This explains why the esophagus pouches more to the left than to the right.

A RECONSTRUCTION OF THE LOWER END OF THE ESOPHAGUS FROM FROZEN SECTIONS

This shows that the terminal portion consists of a vertical part and a horizontal part. Where the two arms join, the esophagus twists on itself and turns to the left. Where the turn comes the esophagus may even actually kink on itself. And where the turn comes the esophagus ends in a point. The left crus crosses behind the esophagus on a slant, running from the left above to the right below. The slanting edge of the left crus mounds into the esophagus and makes the chief boundary of the slit usually called the hiatus. (See Figure No. 2.)

THE HORIZONTAL ARM OF THE TERMINAL PART OF THE ESOPHAGUS

This is imprisoned between the left crus behind and the edge of the posterior surface of the left lobe of the liver in front. The right crus comes in between the liver and the horizontal arm in front, but the right crus is thin and does not leave its impression on the esophagus as does the left crus. Frozen sections show that the horizontal arm of the esophagus is flat and practically closed. Backward pressure on the liver will actually close the lumen of the horizontal arm, whereas pulling the liver forward or downward opens it. Tipping the liver forward and its posterior surface backward also closes the horizontal arm. As we study the anatomy of the esophagus on the dead the patency of the horizontal arm of the esophagus is seemingly controlled by the position of the liver. (See Figure No. 3.)

In frozen sections, when the esophagus is taken out of the diaphragmatic cone, a large and roughly oval hole is left in which the left crus and the aorta figure prominently posteriorly, the thin right crus anteriorly. Between the anterior edge of the left crus and the left edge of the anterior crus there is a membranous area through which the horizontal arm reaches the stomach. This membranous area is overlain by the liver. Between the right edge of the aorta and the posterior surface of the right or anterior crus there is another membranous area. It is only when the esophagus is put back in place and it resumes its natural bend to the left that anything approaching a hiatus is found. (See Figure No. 4.)

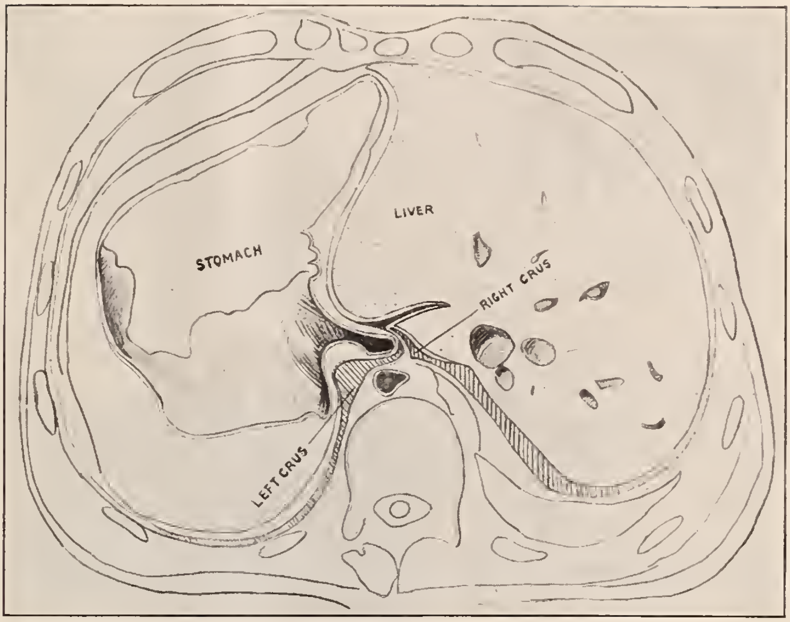

Figure No. 3.

Drawing from a frozen section from an adult cadaver. The section passes through the horizontal arm of the terminal portion of the esophagus. Notice that the left or posterior crus lies behind the horizontal arm and that the posterior surface of the left lobe of the liver lies in front. The anterior or right crus in this specimen is not in relation with the anterior surface of the horizontal arm.

The drawing shows how backward pressure from the left lobe of the liver will close the horizontal arm.

THE APPLICATION OF THIS ANATOMY

The esophagus ends in a point or slit. The terminal part turns to the left and partially twists on itself. The pointing of the esophagus is accentuated by the left crus passing obliquely behind the esophagus and by the pressure of the liver on the front face of the horizontal arm. The edge of the posterior surface of the left lobe of liver is parallel with the edge of the left crus. The anterior crus is so thin that it plays but a minor part in the opening and closing of the horizontal arm. (See Figure No. 4.)

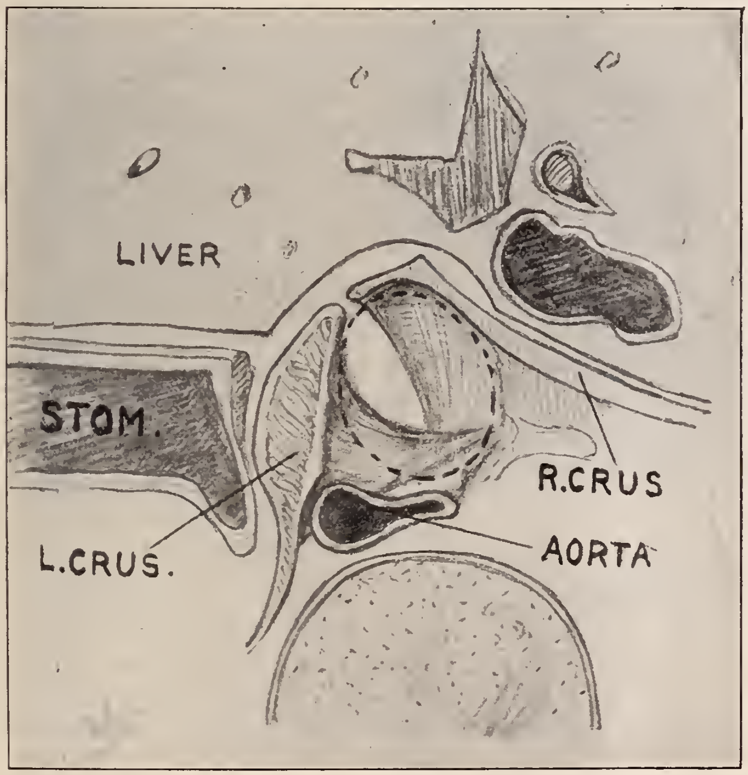

Figure No. 4.

Drawing from a frozen section of an adult cadaver. The terminal portion of the esophagus has been removed in order to show the crura. The dotted line indicates the esophagus.

Notice how much thicker the posterior crus is than the anterior crus. The drawing shows how the left crus passes obliquely behind the esophagus and between the esophagus and the aorta. The posterior surface of the left lobe of the liver is seen overlying the anterior surfaces of both crura.

FLUROSCOPIC AND X-RAY FINDINGS IN NORMAL SWALLOWING

In normal individuals, when the diaphragm is up, there is a momentary delay in swallowing. The esophagus comes to a nipple-like point in the middle of the liver tunnel. When the diaphragm and the liver go down the terminal part of the esophagus opens and the contents of the esophagus move freely into the stomach. This observation—which I admit was just the opposite of what I expected—has been abundantly verified. It should be remembered that the above happens in the normal esophagus. In certain cases of cardiospasm either the position of the diaphragm and the liver has no influence on the esophagus in swallowing or a reversed finding occurs—that is the esophagus is closed momentarily when the liver is down and opens when the liver is up. A satisfactory reason for this I do know now. (See Figure No. 6.)

The esophageal nipple in normal cases occurs in the middle of the liver tunnel at the junction of the vertical and the horizontal arms of the terminal part of the esophagus. Frozen sections show that the vertical portion normally comes to a point.

A successful x-ray of the terminal portion of the esophagus, therefore, shows the esophagus closing momentarily in a nipple-like point in the middle of the liver tunnel. Between the nipple and the fundus of the stomach is a gap unfilled with barium. This gap is the closed horizontal arm. As the liver goes down, and its pressure on the horizontal arm of the terminal part of the esophagus is released, the horizontal arm opens and a continuous stream of barium flows into the stomach. (See Figure No. 7.)

A year ago I thought that the momentary closure of the esophagus occurred at the upper edge of the liver. I now ask the privilege of changing my belief. In cases of cardiospasm the two sites of the causative stricture are at the level of the liver edge, that is at the beginning of the liver tunnel and half way down the liver tunnel at the junction of the vertical and horizontal arms of the terminal portion of the esophagus—in other words, at the point where the esophageal nipple occurs. I suspect that further observation will place the stricture more often at the level of the esophageal nipple.

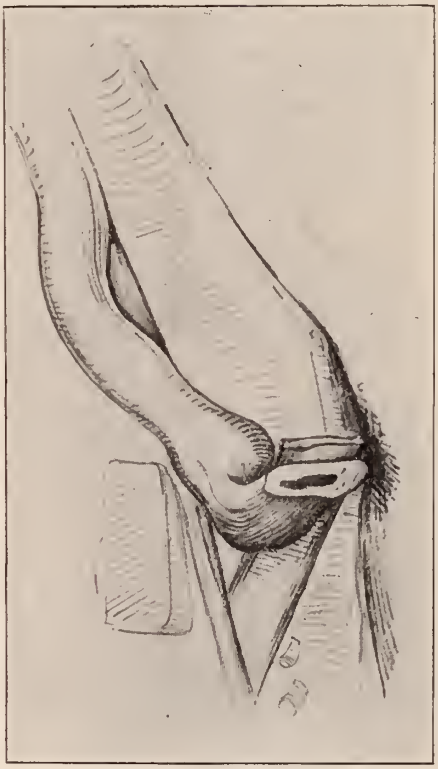

Figure No. 5.

Drawing of the terminal portion of the esophagus of an adult cadaver. The esophagus was not injected. The specimen shows the twist of the terminal portion of the esophagus. Notice how the left crus lies behind the horizontal arm. The anterior crus has been mostly cut away. Above the edge of the left crus there is a globular dilatation of the esophagus.

When the esophagus is distended the horizontal arm straightens out and the distinction between the vertical and the horizontal arms of the terminal portion of the esophagus is lost.

X-RAY FINDINGS AT BIRTH

In ten dead term babies the esophagus and stomach were filled with a watery solution of barium sulphate. As this mixture hardens slowly it was possible to study the effect of position and posture on the esophagus. I have long felt that posture must have some effect on the esophagus. The orthopedists maintain that they have cured cases of cardiospasm by correcting faulty posture. Last year Goldthwait reported the cure of some eighty cases which he diagnosed as cardiospasm. None of his cases were examined with the esophagoscope—so there is a rift in the lute—and when his enthusiasm for the results of correcting faulty posture lead him to claim the cure of an esophageal pouch at the beginning of the esophagus my sympathy with his position waned. Nevertheless the anatomical studies about to be outlined bear out his contention that a faulty position of the body (a chest contracted antroposteriorly, with the consequent increased pressure of the liver on the horizontal arm of the terminal part of the esophagus) can cause obstruction or difficulty in swallowing, and that the correction of the faulty position will cure this difficulty. At any rate the findings on the babies are grist for his mill.

In the first baby experimented on, the air was let out of the abdomen by a needle and the trunk of the baby strongly flexed forward. The x-ray showed that the esophagus was bent to the right, and that a kink occurred at the level of the summit of the diaphragm. When the baby was straightened out and bent backwards in the dress parade position the esophagus straightened out also. Posture, therefore, will influence the position of the esophagus. Lateral bending had little or no effect.

When the diaphragm of the baby was forced strongly upward by injecting air into the abdominal cavity, the esophagus bent to the right and kinked at the level of the upper limit of the diaphragm. The air was then withdrawn from the abdomen and the diaphragm forced downward by forcing air into the thorax. When this was done the esophagus became straight again. When the abdomen was filled with air and the air pressure was supplemented by upward pressure of the hand on the lower part of the abdomen a very marked displacement and kinking of the esophagus occurred. The application of these findings which one would like to make is that faulty posture long continued or increased abdominal pressure recurring over a sufficient period can unseat the esophagus from its vertebral bed and in time initiate trouble with the passage of food through the esophagus.

CADAVER EXPERIMENTS IN THE ADULT

If backward pressure is made on the left lobe of the liver, the abdominal wall being flaccid, and the lumen of the esophagus is watched through the esophagoscope a crescentic mound appears in the right quadrant of the field. Very strong pressure will practically close the esophagus. This mounding into the field of the esophagoscope is caused by the liver. Anatomically it may be either the upper edge of the left lobe or the edge of the Spigelian lobe where this fits into the lesser curvature of the stomach and bounds the terminal portion of the esophagus on the right. If downward traction is made on the liver the lumen of the esophagus increases in size.

CLINICAL FINDINGS IN CASES OF CARDIOSPASM

A review of my findings in ten typical cases of cardiospasm, a small number of cases, but the total number in which I have complete records, shows that in all of them there was a stricture of the lower end of the esophagus. The stricture was found either at the level of the upper edge of the left lobe of the liver or in the liver tunnel. In four it was a thin diaphragm with a central opening, in five a crescentic, web-like narrowing of the right half of the esophagus, and in one a narrowing of the whole liver tunnel with two partial crescentic strictures, one an inch, and the other half an inch above the beginning of the liver tunnel. (See Figure No. 8.)

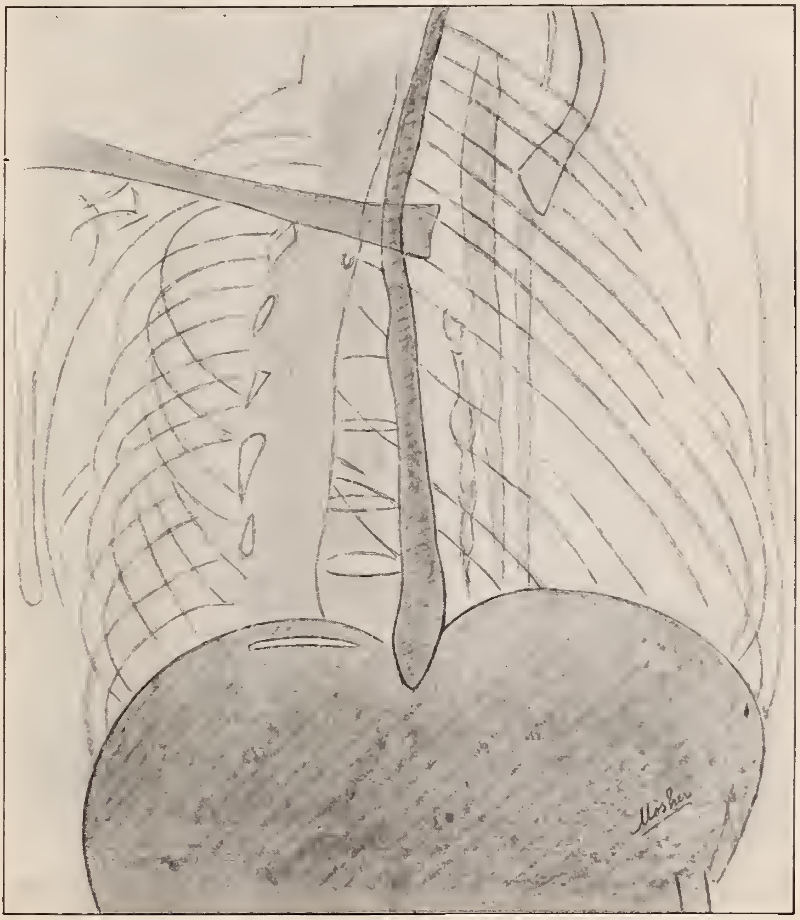

Figure No. 6.

Tracing of an x-ray plate of a young adult male. The plate is taken from behind so that right and left are reversed. The plate was taken in full expiration with the diaphragm at the limit of its upward excursion.

The plate shows the esophagus coming to a point in the middle of the diaphragmatic cone. This point is at the junction of the vertical and horizontal arms of the terminal portion of the esophagus. When the liver and the diaphragm are up, the backward pressure of the left lobe of the liver on the horizontal arm momentarily closes the esophagus. This has been proven to happen in the majority of normal individuals so far examined.

THEORY OF THE CAUSE OF STRICTURE IN CARDIOSPASM

The posterior surface of the left lobe of the liver reinforces the front face of the terminal portion of the esophagus in the same manner that the cricoid cartilage stiffens the upper part of the esophagus. In both places the vertebral column is a rigid wall behind. In entering the esophagus a bougie has to displace the cricoid; in leaving, it must displace the liver. When food enters the esophagus the cricoid cartilege moves forward and upward. When it leaves the esophagus the liver moves forward and downward. If I am right in believing that in certain cases the liver becomes glued to the front face of the esophagus the analogy is complete.

The same type of stricture which is found back of the cricoid cartilage is found in the liver tunnel back of the liver. Lateral webs and thin diaphragm-like strictures with a small central opening are characteristic of the upper part of the esophagus. So far, most of the strictures which I have found in cardiospasm are of these two types.

The liver tunnel differs from the cricoid tunnel—if I may use this term for the moment—in that the esophagus in the middle of the liver tunnel twists on itself and narrows to a point at the site of the twist or kink. This produces the esophageal nipple in normal swallowing.

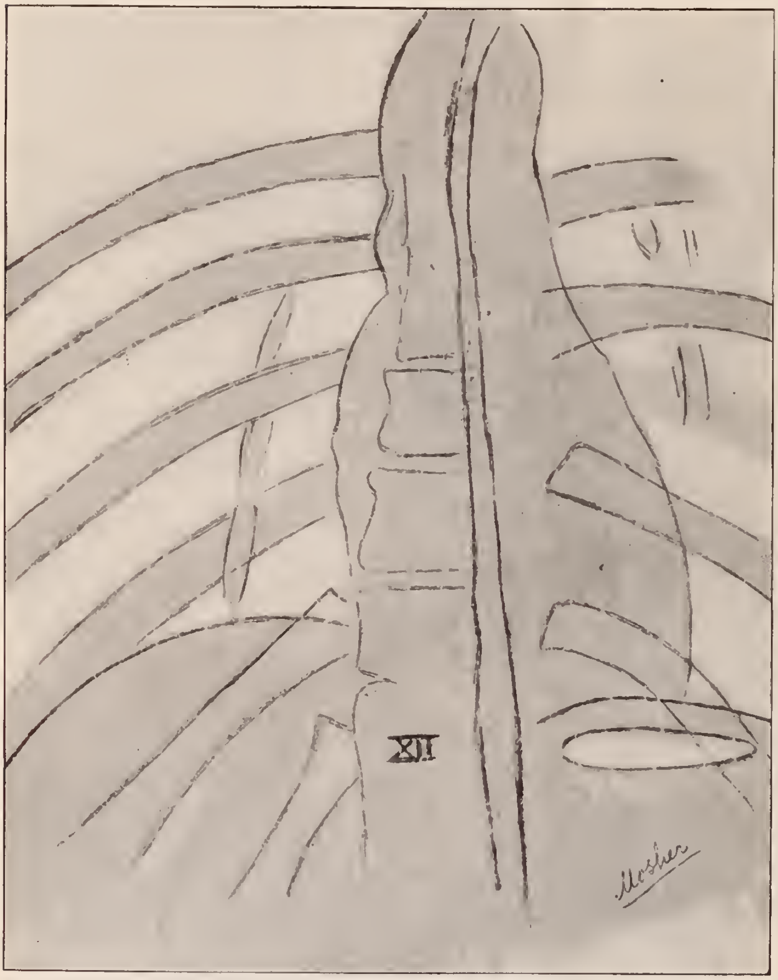

Figure No. 7.

Tracing from an x-ray plate of an adult male. This is a companion plate to that shown in Figure No. 6. The plate is taken from the front and right and left are not reversed as in Figure No. 6.

The diaphragm is shown in full inspiration and at the limit of its downward excursion.

Notice that the esophagus has opened and that the barium milk passes freely into the stomach. As the diaphragm goes down, carrying the liver with it, the pressure of the liver on the horizontal arm is released and the esophagus opens.

The distinction between the vertical and the horizontal arms of the terminal portion of the esophagus has disappeared. With the descent of the liver and the stomach the horizontal arm comes into line with the upper part of the esophagus.

The posterior face of the left lobe of the liver, especially its upper edge which so often actually indents the esophagus, produces a narrowing of the esophagus which accentuates any form of trauma to which the lower part of the esophagus is subjected. Foreign bodies have to squeeze by the liver edge and through the liver tunnel. The passage of hot fluids or caustics is delayed. The upper edge of the liver acts as an intermittent clamp on the esophagus and its constant hammering seems to reinforce ulcerative processes and to localize strictures at this level. In the thirty-seven casts of the adult five string-like strictures were found at the beginning of the liver tunnel opposite the liver edge and no such strictures were found anywhere else. It was this finding which led me to attach so much importance to the backward pressure of the liver edge.

In nine of the cases of cardiospasm the esophagus showed that below the stricture the rest of the esophagus was open and normal. In one, however, the whole of the liver tunnel was narrowed. My conception of cardiospasm, therefore, is that it is due in many cases either to a stricture of the esophagus at the beginning of the liver tunnel or in the liver tunnel or to a narrowing of the liver tunnel as a whole. Such strictures may be due to causes acting within the esophagus—trauma or caustics—or to causes acting from without. For instance, one of the strictures found in the cadaver was placed in front of a healed tubercular ulcer of the body of the thoracic vertebra opposite. Narrowing of the whole liver tunnel I feel is probably due to a primary or secondary infection of the lesser omentum. It could also be due to a perihepatitis. It is well known that in certain gallbladder cases temporary cardiospasm occurs. In cancer of the fundus of the stomach there is often an associated cardiospasm.

I believe that I am right in saying that cardiospasm has been observed in association with appendicitis. In such cases, where the cardiospasm is temporary, the mobility of the liver tunnel is restored with the subsidence of the infection.

Where permanent difficulty in swallowing results, adhesions produce a lasting deformity of the liver tunnel.

In one of my cases of cardiospasm there was a history of general peritonitis of unknown origin twenty years before. In another, the patient when an infant swallowed a two-cent piece. Recently in New York a case of cardiospasm came to abdominal section and the liver tunnel was found to be obliterated by adhesions. In another case of cardiospasm pneumo-peritoneum showed that the liver was adherent to the under surface of the diaphragm.

It has just been shown that many cases of cardiospasm are really cases of stricture of the terminal portion of the esophagus. Other cases of cardiospasm occur, however, in which the difficulty of the entrance of food from the lower part of the esophagus into the stomach is due, not to a stricture or a narrowing of the liver tunnel as a whole, but to mobilization and displacement of the terminal part of the esophagus. That there is no obstruction in the esophagus is shown by the fact that not only the full sized esophagoscope but a No. 40 bougie will pass into the stomach of the patient without difficulty.

In many cases of so-called cardiospasm there is a ptosis of the diaphragm or even a general visceroptosis. In the normal individual the downward excursion of the diaphragm is the same as the upward excursion; that is, both are about an inch and a half. In a markedly ptotic diaphragm the downward excursion is either nothing at all or only a quarter of an inch. The upward excursion remains the same as in the normal. The x-ray picture of such a diaphragm shows that the two halves are nearly flat. The following I believe to be the explanation of the difficulty in swallowing in this type of case: As the diaphragm descends and becomes permanently flattened the cone of the diaphragm opens and flattens out and ceases to be a cone. The normal cone of the diaphragm acts as a sleeve which holds the lower part of the esophagus in line with the thoracic portion. When the support of this sleeve is withdrawn the terminal portion of the esophagus is mobilized and floats more or less aimlessly about on the surface of the flattened diaphragm. The terminal part of the esophagus sags to the right and this malposition turns the esophagus into a trap. Once this trap is started it tends to increase automatically. In extreme cases the dilated and bent esophagus

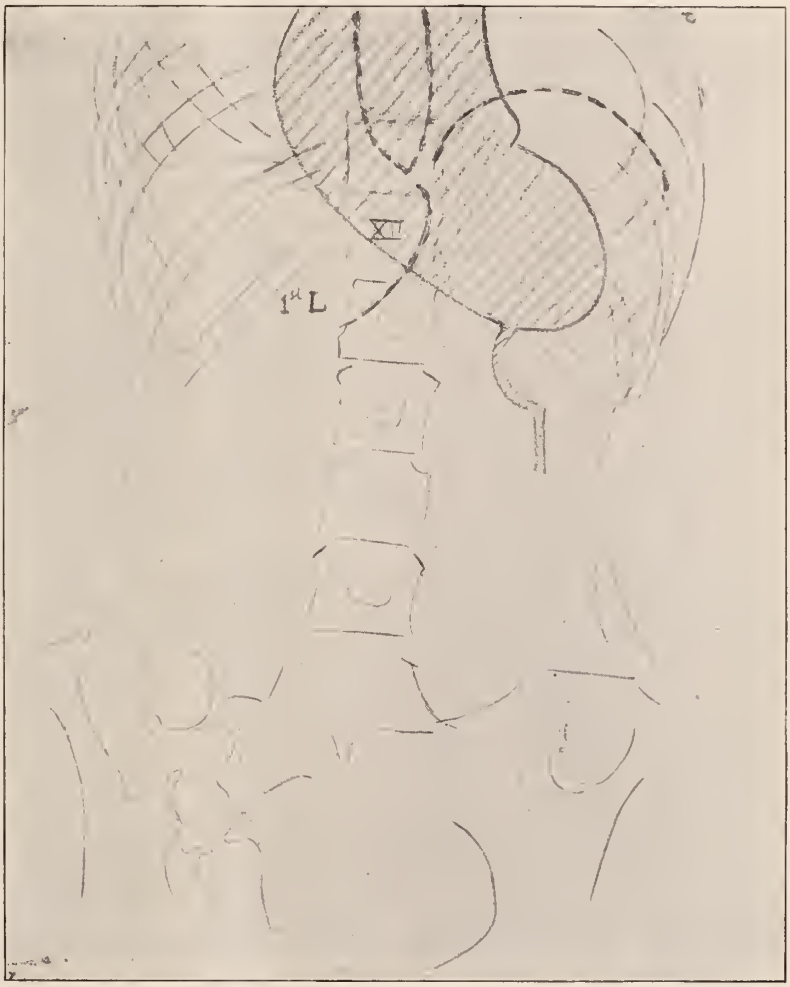

Figure No. 8.

Tracing from an x-ray plate of a long standing case of so-called cardiospasm. The patient was a woman of fifty. The condition has existed some sixteen years.

Notice how the esophagus is dilated and swings to the right. On examination under ether, the opening through the diaphram was found to be a small fibrous opening which could be dilated only to the size of a No. 22 French bougie. Notice how the opening is displaced downward two vertebræ and a half and displaced to the left the width of one vertebra. The horizontal arm of the esophagus is seen as a narrow perpendicular thread. In this case there was a general viseroptosis and the greater curvature of the stomach was at the bottom of the pelvis. The downward pull of the fallen and distended stomach has straightened out the horizontal arm of the terminal portion of the esophagus.

The position of the normal esophagus is shown by the dotted lines. The esophagus is shown diagrammatically with the diaphragm up. It ends in the typical physiological point which I have come to feel is the site of election for the strictures which are the cause of the majority of cases of cardiospasm.

may occupy a large part of the right half of the thoracic cavity. As the esophagus enlarges and bends it loses its hold on the vertebral column. Once this is lost it can never be regained. This increases the difficulty in which the esophagus finds itself.

As the esophagus sags to the right there is an upward pull on the terminal portion. Usually in these cases there is a general ptosis of all the abdominal viscera. As the stomach enlarges and descends it pulls on the terminal portion of the esophagus from below so that between the two pulls this part of the esophagus is stretched to a narrow ribbon. It needs but a little inflammatory reaction within or without the esophagus to make this narrowing a permanent affair. Stasis of food could easily start an esophagitis from time to time. I have the feeling that after a while—these cases run on for years—the hiatus itself becomes narrowed. This would explain the reversed reaction of the diaphragm in swallowing: namely, that when the diaphragm is down the esophagus is closed. The hiatus in this case would act as a small ring. As this slipped down on the esophagus it would close it at the point where the esophagus bends to the left.

In cases of cardiospasm, due to mobilization and displacement of the terminal portion of the esophagus, the passing of a bougie temporarily brings the thoracic part of the esophagus into line with the terminal portion. When it is withdrawn, however, the previous condition is reëstablished and little if any improvement results.

What is the practical application of the foregoing facts? In other words, what is the prognosis of a given case of cardiospasm? If the x-ray shows a stricture in the region of the liver tunnel and the examination with the esophagoscope shows this to be a lateral web, the web can be divulsed with the mechanical dilator under ether. Normal swallowing is restored and the occasional passing of a bougie for a short period makes the cure permanent. A diaphragm-like stricture with a small central opening is treated in the same way. This type of stricture gives the most brilliant results. If the whole liver tunnel is narrowed, a gain in the patient's ability to swallow can be secured if the stricture is not too tight. Such a patient, however, must lead a bougie life. In the cases in which the diaphragm is flattened and the thoracic esophagus makes a marked trap, dilatation offers but little help unless a stricture has been superimposed by inflammatory reaction within or without the esophagus.

828 Beacon Street.

DISCUSSION

Dr. Chevalier Jackson (Philadelphia): The anatomic studies of the esophagus made by Dr. Mosher are fundamental and all clinicians are indebted to him for an anatomic basis to which to refer for the explanation of clinical facts. For instance, I have noticed for years that, especially in cases with a dilated esophagus, the esophagoscope in the esophagus would drop off first to one side of the spine, then the other. This clinical fact is explained by the precarious vertebral bed which we have just had so beautifully demonstrated to us. Another clinical observation that corroborates the anatomical findings is as to absence, in many cases, of a demonstrable abdominal esophagus such as shown in the classical anatomical works. At retrograde esophagoscopy there seems to be no abdominal esophagus. It often requires a prolonged search of the stomach wall against the under surface of the diaphragm with the retrograde esophagoscope to find the hiatal opening, and when found it seems to be an opening from the stomach through the diaphragm into the thoracic esophagus. Still another corroboration is the case of Pott's disease of the spine seen in consultation with Dr. John W. Boyce and Dr. Russell H. Boggs, and published some years ago, in which there was a deviation of the esophagus rendered redundant in length by posture. The deviation was similar in form to that created in the infant cadaver as shown on the screen.

In utilizing anatomic studies it is always necessary to remember how anatomic form is modified by movement in the living. The cadaveric anatomy is motionless. In the living we have the various movements, respiratory, pulsatory, bechic, reflex, deglutitory, or peristaltic, antiperistaltic and voluntary. Those of us who use no anesthetic, general or local, see more of the movements than those who use general anesthesia; but even the deepest anesthesia cannot be carried to the point of completely abolishing any except the voluntary movements and those reflexes excited by the presence of the esophagoscope.

In my early work I discovered that the stenosis in so-called cardiospasm was not at the cardia. I thought the spasm was at the hiatus and was due to the pull of the diaphragmatic musculature. Then by checking my observations I came to the conclusion that the condition was not a true spasm of any of the diaphragmatic muscular fibres, but a failure of the diaphragmatic pinchcock to open at the proper time in the deglutitory cycle. I concluded that once the hiatal opening in the flat floor of the esophageal dilatation was found it required no more pressure to get through than in a normal esophagus. Looking at the classical illustrations and at the cadaver, it seemed to me that the crura of the diaphragm, under the pull of the diaphragmatic musculation, formed an ideal mechanism for occluding the esophagus by pinching, as the pinchcock of the laboratory pinches the rubber tube. This seemed to me, when added to the kinking, to be the normal prevention of upward leakage from the stomach. At the approach of the bolus in normal deglutition this pinchcock I thought opened, just as the automatic signal is opened at the approach of the train. In the syndrome called "cardiospasm" the pinchcock fails to open, the relaxor, not the tensor, mechanism being at fault. I now realize that this can only apply to the cases in which there is no organic stenosis. That there are such cases I feel sure, from the fact that an esophagoscope the diameter of your thumb will pass through without obstruction, and from the fact that in an occasional case the opaque mixture can be seen in the fluoroscope to empty with a rush once the pinchcock opens. My observations corroborate those of Dr. Mosher as to there being an organic stenosis in many cases; in what percentage I am not yet prepared to say, but we are collecting data at the Bronchoscopic Clinic. Referring to those cases in which there is only a trickle visible below the stenotic point, I should like Dr. Mosher's opinion as to whether there is a narrow liver tunnel or only a narrow shadow because of the small amount of opaque mixture leaking through.

As to spasms elsewhere in the esophagus, we have often noted in the Bronchoscopic Clinic that in cases coming in with a history of intermittent stenosis of the thoracic esophagus supposed to be spasmodic, there was an organic narrowing occluded by fragments, or a mass, of ill-masticated food.

There comes to mind this afternoon a saying of S. D. Gross. When he could find no organic disease in a hysterical patient he would say jokingly, "Your liver hangs too low." It has remained for Dr. Mosher to demonstrate that it was no joke. The liver evidently may hang too low. Or shall we say too high? Or too far back? Or shall we say it does not rise to the occasion and come forward as a well-regulated liver should? Possibly Dr. Mosher will devise a liver regulator that will cure cardiospasm!

DR. GEORGE B. JOBSON (Franklin): I make the motion that we express to Dr. Mosher the debt of gratitude we owe him for coming to our meeting and presenting to us this splendid paper.

Motion seconded and carried unanimously.

DR. MOSHER (in closing): I agree with Dr. Jackson that the crura probably have a certain pinchcock action on the terminal portion of the esophagus. The anterior crus, however, is much weaker than the posterior and has to be helped out. This help comes, I believe, from the pressure of the posterior surface of the left lobe of the liver.

I have found, as Dr. Jackson found, that it is often hard to find the opening of the lower end of the esophagus with a tube placed in the stomach.

THE ROLE OF UNRESOLVED PNEUMONIA IN BRONCHIAL ASTHMA

In nine cases of bronchial asthma reviewed by Joseph Harkavy, New York (*Journal A. M. A.*, Dec. 9, 1922), in which the asthmatic attacks were dated from an antecedent pneumonia, five of the patients gave a history of influenzal bronchopneumonia in 1918, 1919 and 1920. In all of the cases, the roentgen ray shadows were interpreted as being due to unresolved pneumonia. In two of this group in which the asthma was of longer duration, bronchiectatic cavities were found by bronchoscopy. Aspiration of these bronchi yielded fibrin flakes from which anhemolytic streptococci were recovered in pure culture. Four of these cases were treated by application of roentgen rays to the involved lung area, with disappearance of the pneumonia and with the formation of diaphragmatic adhesions within a period of from four to five months. One patient was treated with typhoid vaccine with similar results. With the disappearance of the focus, as demonstrated by the roentgen ray, definite improvement of asthmatic attacks was noted. (We used the roentgen ray as well as typhoid vaccine as nonspecific therapeutic agents.) Whether this improvement will be permanent, it is at present too early to state. All of these cases have been observed for one year. In none of these cases have positive cutaneous tests to foreign proteins or bacterial proteins been obtained.

Dr. O. Pine queries: Why is it that we brook so ill the opposition of our confreres to our cherished illogical hobbies? Is it "Love me, love my dogma?"

SELECTIONS

PHENOLPHTHALEIN DRUG ERUPTION*

JOSEPH V. KLAUDER, M.D.†

PHILADELPHIA

Although phenolphthalein has long been in use chiefly as a laxative, it is only comparatively recently that dermatologists are seeing an eruption due to this drug. The first instance of such an eruption was reported in 1918 by Abramowitz,[1] and since then other cases have been reported by Fox,[2] Rosen,[3] Silberstein,[4] Sheer,[5] Wise[6] and by Ayers.[7]* It appears that after prolonged use of the drug an intolerance, at least in some cases, is established. Moreover, the occurrence of an eruption caused by phenolphthalein is evidence against the common belief that the drug is free of toxic properties.

CLINICAL FEATURES OF PHENOLPHTHALEIN ERUPTION

The eruption caused by phenolphthalein is in most cases a typical one. It is a sharply marginated, almost perfectly round erythematous macule, varying in size from a split pea to that of a dollar. A characteristic feature is the transformation of the pinkish macule into a brownish, pigmented macule which invariably occurs before the lesion entirely involutes. At times the lesion may be wheal-like, or a flat-topped elevation or a scaly macule. The eruption may occur on any part of the body, but more particularly on the trunk. The number of lesions varies from a few to as many as fifty. Itching may or may not be present. The eruption appears within twenty-four hours after ingestion of the drug. The duration of the eruption after the last ingestion of the drug is variable. In most instances it persists for a few weeks; in exceptional cases many months. In these instances the lesions are more likely to be the residual pigmentary macules. Indeed in Sheer's[5] case these brownish macules were present six months after the last ingestion of phenolphthalein. If the drug is taken at intervals the first appearing lesions—the erythematous macules—may remain as such indefinitely.

In the patient whose photograph is herewith shown there were four erythematous macules which appeared about fifteen hours after taking Ex-Lax, a proprietary laxative containing phenolphthalein. These macules persisted for about two weeks and then became pigmented. The pigmented macules remained for about two weeks longer. Curiously, after each ingestion of the drug the same number of macules appeared, which always involved the same sites.

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* Read at a meeting of the West Branch Philadelphia County Medical Society. From the Dermatological Clinic, Misericordia Hospital.

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One lesion involved a portion of the glans, the sulcus and shaft of the penis. Perhaps because of friction the surface of this lesion was excoriated and oozed a bloody serum. It resembled an erosive chancre. If this had been the only lesion present the diagnosis of phenolphthalein eruption would have been difficult. Depending upon location of a phenolphthalein eruption, it therefore, appears that the usual type of lesion may be modified in appearance. Silberstein[4] reports the occurrence of plaques involving the tongue, appearing after the ingestion of phenolphthalein.

PROPRIETARY MEDICINES CONTAINING PHENOLPHTHALEIN

There are a large number of proprietary medicines containing phenolphthalein, most of which are popular laxative medicaments. Street[8] gives the following proprietary drugs which contain phenolphthalein: A. D. S. Fruit Laxative, Agar-Lac, Alophen Pills, Analax, Auto-Lax Chocolates, Bismuroids, Bonalax, Citrolax, Dilaxin Pills, Ex-Lax, Exurgine, Figuroids, Joy Powder and Joy Tablets, Kellogg's Canitone Wafers, Laxaphen, Laxatol, Laxen, Laxine, Laxoin, Laxothalen Tablets, Lepsolets, Liophtal, Lux Cold Tablets, Marmola Prescription Tablets, Nurito, Partola, Pearl La Sage Complexion Treatment, Po-Do-Lax, Probilin Pills, Pruoids, Purgen, Phecolax, Phecozymes, Phenalein, Phenaloin, Phenloin Tablets, Phenolax Wafers, Rexall Orderlies, Sofose, Tanlac Laxative Tablets, Taurocol, Veracolate, Woods C Treatment for the Tobacco Habit.

PATHOLOGY OF PHENOLPHTHALEIN ERUPTION

The pathology of the lesions comprising phenolphthalein eruption has been studied by Abramowitz.[1] He states that the most striking change is a considerable deposit of pigment. This pigment was in the form of dark brown granules contained in irregularly pear-shaped cells in perivascular zones. They did not give the blue reaction with Perle's stain for iron. Other changes noted were: a loosely laminated horny layer; a moderate parenchymatous edema of the rete, with an increase in size of the rete pegs, some of which were confluent; a very little vascular dilatation, but some endothelial proliferation and hyperplasia; a moderate perivascular collection of round cells, mostly in the papillary and subpapillary bodies. The collagen and the elastica were normal.

It is to be noted in the foregoing study of Abramowitz that Perl's stain of the pigmented cells was negative. This excludes the hematogenous origin of the pigment. It is in all probability melanin.

NOSOLOGY OF PHENOLPHTHALEIN ERUPTION

Phenolphthalein eruption can be classified under that large, heterogeneous and complex group of dermatoses known as the erythemata (inflammatous-exudationes). One principle form of these is erythema multiforme; other closely related forms are urticaria and purpura. Regarding this group, Osler aptly remarked that "what is needed in truth, is a dermatological Linnæus to bring order out of the chaos existing in the group of erythemas."

The causes capable of producing erythema are extremely numerous and varied. An etiological classification of the erythemas is unsatisfactory since the condition is not a disease but purely a symptom. Hence Brocq refuses to group erythema among the true morbid entities, but makes it one of the chief types of his "cutaneous reactions."

The immediate causes of erythema are external or internal. The internal causes may be alimentary, medicinal, serotherapeutic, autotoxic or infectious.

Payne[8] divides the erythemas as follows: 1. Toxic erythema, produced by drugs, poisons (bacterial, protein, etc.). 2. Symptomatic erythema; prodromal rashes in contagious diseases, purpura in rheumatism, roseola of cholera and influenza, erythema in uremia. 3. Idiopathic erythema; (a) eruption, simple or multiform; no fever, no general disturbance; eruption might be painful, itching or burning; (b) general constitutional disturbance; eruption might be painful, itching or burning; (c) eruption persistent, dependent sometimes on successive crops, but in other cases the same lesion remained in the same spots during the whole duration of the disease.

The pathologic processes involved in the production of the erythemata is not definitely known. There is apparently a selective vasomotor action by the causative drug or toxin. More recently some writers have conceived the phenomena as being of an allergic nature. In all probability the mechanism of their production is much the same and is set into action by diverse causes.

OTHER ERUPTIONS, SIMILAR TO PHENOLPHTHALEIN ERUPTION, DUE TO OTHER CAUSES

Of the drugs that may cause erythematous macules, in addition to phenolphthalein, particular mention may be made of antipyrin, the salicylates, the iodids and copaiba. It should be borne in mind that erythema is perhaps the most common form of drug eruption.

Although there are many forms of eruption due to drugs, only two—iodin and bromin and their salts—are capable of producing lesions which are special and peculiar. In most all the the other drugs the eruption itself follows a recognized type. It is chiefly from the circumstance under which it occurs that the cause is ascertainable.

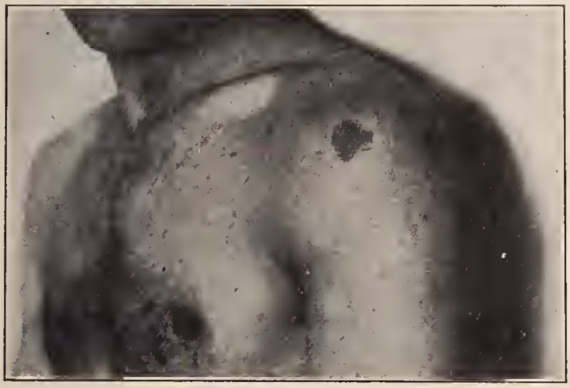

Fig. I.

Phenophthalein Drug Eruption Showing Erythematous Macule. Fifteen hours after the ingestion of phenophthalein four erythematous macules appeared which were distributed as follows: near left shoulder, below right hip, palm of left hand and on the penis. The patient has been taking Ex-Lax at intervals for three years, although the eruption has been present at intervals during the past three months. The eruption would always appear at the same site. The erythematous macules remained for about two weeks and then became pigmented (Fig. II). After about two weeks longer they disappeared. The erythematous macules were sharply marginated, bright red in color. The erythema disappeared on pressure. Slight itching was present.

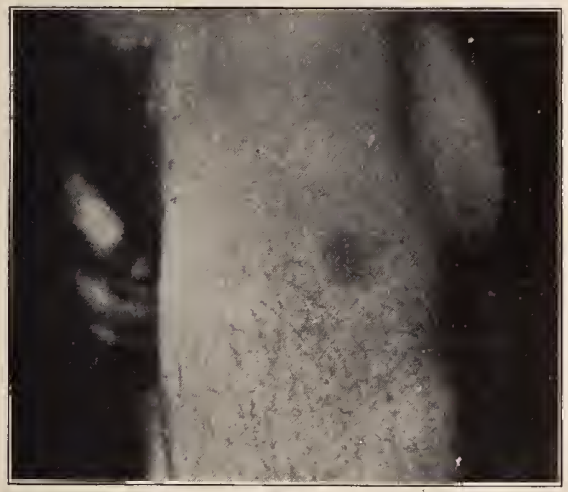

Fig. II.

Same patient whose photograph is shown in Fig. I, showing pigmented macule which appeared at the site of a previous erythematous macule.

The occurrence of erythematous macules followed by pigmentation is not solely characteristic of phenolphthalein eruption. In the group of erythemas under discussion such a phenomenon may occur from other causes. Some forms of erythema multiforme followed by pigmentation are occasionally seen. Specific mention may be made of erythema multiforme perstans, the macular lesions of which may become pigmented. Of other drug eruptions antipyrin may cause scattered isolated erythema accompanied by pigmentation and occurring in the same sites each time the drug is taken. Similar eruptions have been described which are of unknown or ill-defined cause. Ehrmann[9] reports such instances, which he called "circumscripte erytheme en plaques." He ascribed them to constipation and menstrual disorders. Another and notable instance of such a phenomenon is seen in urticaria pigmentosa and in Quinquad's urticaria (maladie pigmentee urticante of Quinquad), that form of urticaria followed by pigmentation with absence of mast-cells.

DIFFERENTIAL DIAGNOSIS OF PHENOLPHTHALEIN ERUPTION

It is seen from the foregoing that erythematous macules are by no means characteristic of phenolphthalein eruption but that such lesions may arise from varied causes. However, the pigmentation of the erythematous macules in phenolphthalein eruption is the characteristic feature. Its occurrence is the exception rather than the rule in erythematous eruptions due to other causes. In other instances in which erythematous macules are accompanied by pigmentation the differential diagnosis can be made only through the administration of phenolphthalein.

If a drug is suspected as the causative agent in an erythematous macular eruption the history of recent drug ingestion and the administration of the suspected drug are means of making the diagnosis.

The absence of urticarial lesions excludes other forms of erythema and also excludes urticaria pigmentosa and urticaria of Quinquad. These latter, when seen in the pigmented stage, may be confused with phenolphthalein eruption.

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Dr. O. Pine queries: Why do not aspirants for presidencies of medical societies learn some parliamentary law before and during the preëlection stage, and why do some not concern themselves to learn any even while adorning the chair?

THE USE AND ABUSE OF CORPUS LUTEUM EXTRACT IN THE TOXIC VOMITING OF EARLY PREGNANCY*

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ALTOONA

The vomiting of early pregnancy has been subjected to many therapeutic abuses. The patient has been treated with medicines, mechanical measures, operations, serums, and finally with endocrine extracts. Each method has its ardent advocates because results are obtained in almost every instance. It is interesting to tabulate briefly some of the more favored remedies: a large percentage of drugs in the pharmacopia, rectal and intravenous feeding, serum from pregnant women who are not vomiting, replacement of retroflexed uterus, multiple punctures of cervix, glycerin tampons, cocain applications to cervix, dilatation of cervix. Hirst[1] states that among other successful therapeutic measures are to be listed vaginal examination, threatened operation, and the simple statement that a certain remedy about to be given will absolutely cure. LaVake[2] has recently reported 3 cases where simple cervical dilatation was performed "with immediate improvement of the condition, and rapid recovery without abortion." Gabastou[3] reports a case where, as a last resort, abortion was decided upon and to all intents and purposes performed (although actually nothing was done). The vomiting subsided and the pregnancy continued. He cites instances of cure by fright, a fire in the house, etc.

But this is the day of endocrine therapy and it therefore behooves us to find an endocrinopathic etiology for the vomiting of early pregnancy and apply the proper gland substance. Coleman[4] quotes Rebaudi as having had success with the use of adrenalin hypodermatically.

Rathery & Bordet[5] obtain satisfactory results by giving daily subcutaneously, 250 cc. normal saline solution with 10 drops of adrenalin. King[6] cured 9 cases by use of ovarian extract tablets in dosages ranging from 1 to 108 tablets —"but there was no conclusive evidence that the ovarian extract was of any value whatever." J. C. Hirst[7] was the first to use, or suggest the use of corpus luteum in the nausea of pregnancy, based on the fact, "established long ago," that the corpus luteum of pregnancy begins to be absorbed about the usual time of the cessation of the nausea. Since 1915 he has published several papers[8] giving percentage of cure at 89.2 and lately advocating the intravenous administration of doses as large as 2 to 4 mils. The results of Hirst have been duplicated by several observers and questioned by many others after presumably fair trial. Quigley[9] reports 70% permanent relief. King[6] treated 12 cases with corpus luteum with quick recovery in 4 mild cases, one abortion with later recovery, 2 deaths, and 5 who received 16 or more doses with no benefit. He also treated 28 cases by sedatives, etc., with 3 deaths and the rest rapid recoveries.

Where lies the truth? It appears to the authors that there has been too much laxity in the diagnosis of the cases. Such diversity of results and opinions indicates that there has been either different selection of cases, or inert gland extract has been used in some instances, or else that all good results are to be explained by chance or by psychotherapy. Writers variously report results of use of corpus luteum in treatment of "hyperemesis gravidarum," "toxic vomiting of early pregnancy," "nausea of early pregnancy," "uncontrollable vomiting," etc. These are widely different conditions; it is a far cry from "nausea of pregnancy" to "hyperemesis gravidarum." The former occurs in about 50% of pregnant women, the latter in a very small percentage. It should be noted that Hirst has based his results on the use of corpus luteum in a consecutive series of "nausea and vomiting of pregnancy."

ETIOLOGICAL CLASSIFICATION NECESSARY

It appears to the authors, then, that much confusion can be avoided and the value of this endocrine therapy proved if physicians will bear in mind that nausea and vomiting of pregnancy may be due to many different causes. Hirst[1] has given 3 types of etiology: 1, toxemia; 2, reflex irritation; 3, neurotic condition. One writer will condemn corpus luteum and insist on dilatation of the cervix or application of cocain to the vaginal vault, because with these treatments he has happened to cure women vomiting because of reflex irritation. Another is equally sure that anything will cure because psychotherapy has relieved several pregnant women nauseated because of neurotic condition. But any one of these therapeutic measures applied to a patient with the toxic vomiting of early pregnancy will have no or, at least, slight effect. It is in the toxic type that endocrine therapy should meet with success if properly employed; but the administration of corpus luteum extract cannot replace a retroverted uterus or cure a neurosis.

We believe, then, that all cases of nausea and vomiting of early pregnancy must be carefully studied in an attempt to discover the etiology. If due to mechanical reasons or to local pathology in the cervix or stomach these should be corrected; if due to a neurosis it should be treated by psychotherapy; if no cause is discoverable we must list it as of toxic origin and proceed to treat by the injection of corpus luteum. It is irrational to use the extract on women vomiting from mechanical or neurotic causes. In addition to these measures every case should be treated by alkalies, sedatives, rest in bed and rectal or intravenous administration of glucose.

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*Read before the Blair County Medical Society of Pennsylvania.

BASIS FOR USE OF CORPUS LUTEUM EXTRACT

The use of corpus luteum is based on the theory that the cessation of nausea at about the third month of pregnancy is due to the degeneration and absorption of the corpus luteum. It is assumed that the corpus luteum is essential to the well-being of women, that it is necessary for one to be absorbed each month and that when pregnancy enlarges and prolongs the life of the corpus luteum, so preventing its absorption, we are confronted with the toxemia of early pregnancy.

The results of corpus luteum administration have in many instances been remarkable. J. C. Hirst claims 89% of cures with the intramuscular use. It certainly is little short of a specific in some cases, but surely not because of the illogical reasons inducing its first trial. It is unreasonable to suppose that a well-developed and evidently glandular body such as the corpus luteum must wait until degeneration before exercising its function; there is no parallel instance in physiology.

It is rather far-fetched to predicate that regeneration and absorption of a corpus luteum is necessary to well-being in the female. Without ovulation there can be no corpus luteum, and still morning nausea and its concomitant symptoms are not expected after surgical removal of both ovaries, after the menopause or before pubescence, or in the male. Neither is there commonly a return of nausea in the latter months of pregnancy, nor during lactation when the corpus luteum must surely be nearly all absorbed. Neither do all pregnant women suffer from toxemia in the first months; in fact less than 50% have any morning nausea or vomiting.

Let us attempt to develop a more rational basis for the continued use of corpus luteum in the vomiting of early pregnancy.

It has been established beyond peradventure of any doubt that the corpus luteum shall be included among the glands numbered in the endocrine system. Histology has shown that this evanescent body has a typical internal gland-like structure; its purpose has been thoroughly theorized and, to lesser extent, proved by animal and human experimentation. We are, therefore, on sure ground when stating that the corpus luteum is a gland of internal secretion. Be it understood that it is essentially the corpus luteum vera that interests us. The spurious variety, aborted by failure of fecundation, has no part in this discussion.

Granted, then, that the corpus luteum gives rise to a hormone, what is the genesis and purpose? Something must be responsible for the prolongation and enlargement of the corpus luteum, and *ipso facto,* there must be a reason for retention and increase of its glandular activity. This true corpus luteum is found only after fecundation. It must be, then, that some new element introduced into the uterus is responsible, directly or indirectly. The most likely element is the trophoblast, chorion and later placenta; for it is known that the trophoblast cells are constantly entering the maternal circulation. Bandler[10] says "The introduction into the body economy of the placental element, which constitutes a secretion, has its effect beyond doubt upon various gland structures of the body, and it is quite possible that this secretion is responsible for the corpus luteum and for the maximum decidual reaction, either by direct influence on the uterus or indirectly through the corpus luteum."

A study of the purpose of the corpus luteum may carry us far afield; a résumé of its reputed functions is useless. In short, the best opinion seems to have it that this secretion stimulates the thyroid and inhibits the posterior pituitary, especially that part controlling the contractile function of the uterus. It may also inhibit the ovarian secretion during pregnancy. The corpus luteum acts in conjunction with the placenta in antagonizing the ovary and posterior pituitary and probably the endometrium and so preventing menstruation during pregnancy. Bandler views labor as an exaggerated menstruation and attributes it to the overpowering action of posterior pituitary and ovary which have been held in check for some 280 days.

FUNCTION OF CORPUS LUTEUM

But has not the corpus luteum another and more important function? It is known to increase in size until the third month of pregnancy, when it begins to undergo absorption. It seems to be functionating most, and it shows the greatest activity, during the first few months of pregnancy. Then surely, there must be something peculiar to these early days that calls for the help of corpus luteum secretion. These days are ones of readjustment of the maternal organism to the changed conditions. Morning vomiting associated with amenorrhea, is the earliest and one of the most reliable signs that fecundation has occurred. This vomiting sometimes becomes quite severe, merging into the condition labeled "Toxemia of Early Pregnancy." Is it not logical to suppose that this toxemia is but an expression of the entrance into the maternal blood stream of the trophoblast cells, which there dissolve and liberate their toxins? A toxin calls forth antibodies, which, if generously produced, so neutralize the poison that it gives no discoverable token of its presence. There is evidence, then, to assume that antibodies are called forth by the placental secretion, which antibodies prevent, to greater or less degree, according to the rapidity and volume in which they are produced, any evidence of toxemia. So, in one case with a generous and quick supply of antibodies, pregnancy may manifest itself in the first two months simply as an amenorrhea; and in another case, with a scanty and tardy response of the antibody mechanism to the foreign invader, the trophoblast, early pregnancy may herald its advent by a toxemia, grading from a simple morning discomfort to the severe type of toxemia necessitating removal of the parasitic ovum.

This parasitic ovum and its placental secretion have local and constitutional activities, to combat which the mother relies on the power of the internal secretory glands to produce antitoxins. In the rôle of antibody manufactories the endocrine glands are admittedly far superior to any other system. The natural question is: Does the mother rely on any particular endocrine to fight the invader, or do all have an equal share? The corpus luteum is developed in the mother at a time when her body is being invaded by parasitic cells and toxins. It is logical to assume that it is these cells or their products that call it forth and that its real puropse is to combat them. It is, so to speak, an emergency gland functioning most at the very first rush of the invaders into the maternal blood stream—a volunteer warding off the attack until the permanent endocrine glands can prepare to take up the burden of furnishing antibodies for these toxins, at which time it turns over the fight to the regulars and withdraws.

Of course it is entirely possible that the corpus luteum itself does not manufacture the antibodies, but is simply developed to stimulate other glands to do so. There has been advanced evidence by Bandler that the thyroid is the gland *par excellence* for the making of substances to overcome the effect of the trophoblast cells on the maternal organism. It is admitted that the corpus luteum stimulates the thyroid gland, so it is probably correct to assume that the corpus luteum combats the toxemia indirectly through the thyroid, although a direct action is also possible. Bandler[11] has said: "The corpus luteum stimulates thyroid activity before menstruation and still continues to stimulate it normally during pregnancy. If the thyroid is not stimulated, the toxemia of pregnancy comes about. We are almost prepared to state that a young woman with a very good thyroid never or rarely has a dangerous toxemia of pregnancy."

If a proper balance is set up between the toxins and the corpus luteum the pregnancy is symptomless; if the corpus luteum lags just a little behind we have nausea, if far behind, we have the severe hyperemesis gravidarum. Other endocrines may have a part in the production of these symptoms, either by hypo, hyper or dysfunction, but the corpus luteum is taken as the "key gland."

METHOD OF ADMINISTRATION AND DOSAGE

Naturally, corpus luteum was first administered by mouth. It was soon found, however, that this was an uncertain method of getting the substance into the circulation, that the gastric juice destroyed its properties, and that it was a gastric irritant; so it was abandoned in favor of intramuscular injection of the extract in solution. Subcutaneous use was discarded as being too irritating. One mil intramuscularly was the favorite method and produced good results in the majority of cases. The disadvantage is that larger dosages than 1 mil are disagreeable when given into the muscle. The seemingly logical solution of this difficulty is to administer intravenously. This has been done and in increasingly larger dosages, sometimes even 3 or 4 mils being given immediately into the blood stream.

It goes without saying that when systemic action of a drug is desired, intravenous administration is the ideal method, because in this way we are sure the drug enters the system unchanged and in full dosage. The great disadvantage is the necessity of giving a large dose at one time. The blood is suddenly flooded with the drug; whereas, with other administrations, small amounts are being constantly absorbed. The endocrine glands as a general rule do not act by storing up a larger amount of secretion and then suddenly releasing it into the blood stream. (There may be exceptions to this, as in the case of the adrenal during anger, etc.) It appears, then, that the intravenous administration of any endocrine substance is illogical unless the result desired is to be temporary. No one, to our knowledge, has determined how long the corpus luteum extract remains unchanged in the blood but if all the other endocrine substances can be taken as criteria, its sojourn unchanged in the blood must be brief.

CORRECT DOSAGE

One mil probably, 2 or 3 mils certainly, is too large an amount to introduce directly into the system at one time. To give the same amount by the intramuscular route is to allow it to be absorbed in very small quantities over a period of several hours at the very least. The problem that now confronts us is the determination of correct dosage for intramuscular use, having concluded that any appreciable dosage by intravenous administration is too much. "Enough" is the answer to the question of proper dosage—enough corpus luteum to neutralize the excess toxins which the patient's own glands cannot take care of. This, then, must differ with each patient. It is a very delicate matter and difficult to obtain the proper balance. If not enough is given we cannot expect the nausea will be overcome; if too much is administered the system will be overcrowded and disagreeable symptoms may result from this hyper-corpus-lutemia.

ABORTIONS FOLLOWING ADMINISTRATION

The two abortions which we report following the administration of corpus luteum extract intravenously, must be due to action of a sudden overdose of the drug. Bandler[10] speaks of the corpus luteum in some cases rousing the posterior pituitary. Assuming the posterior pituitary is stimulated during pregnancy, abortion is the result.

King[6] quotes Hirst as being of the opinion that, theoretically, extract of corpus luteum should at times cause abortion, but he has observed no such tendency clinically. Hirst, in a personal communication, states that he knows of only one abortion which apparently could be traced to the use of corpus luteum extract and goes on to say: "In my experience, abortion occurs much less frequently in cases where the corpus luteum extract is used." We have not been so fortunate, having experienced two abortions attributed directly to the use of corpus luteum. Both were cases of pernicious vomiting of toxic origin which had resisted hygienic measures, alkali therapy, rectal feeding and sedatives. In the first case 2 ampules of corpus luteum extract were slowly given intravenously at 4:30 p. m. This was followed in one hour by a chill, weakness, vertigo, substernal oppression, dyspnea and complete painless abortion in 5 hours. The other woman was given 1 ampule of corpus luteum extract intravenously, and in one-half hour showed a marked reaction. In 6 hours another ampule was administered with no reaction but complete spontaneous abortion within 12 hours.

Frank[12] has recently stated concerning the various commercial preparations of ovaries that "pharmacologically they are inert." This falls in line with the report in a recent German periodical of the use by two different men of corpus luteum in the treatment of opposite conditions. Each man had a series of 150 cases and is highly satisfied with the results. These pessimistic reports should not deter one from using the extract in cases known to be vomiting from toxic cause, but always accompanied by other rational measures.

The best treatment, then, of the toxic vomiting of early pregnancy would appear to be: absolute rest in bed, no liquids by mouth, glucose and soda by rectum or vein, sedatives, and extract of corpus luteum given in 1 mil doses intramuscularly one or two times a day.

Patients showing nausea of toxic origin may be treated by hygienic measures and corpus luteum extract given intramuscularly in 1 mil doses each or every other day.

CONCLUSIONS

1. There is too much laxity in classification of types and causes of vomiting of early pregnancy.

2. Corpus luteum extract should be applied to those cases of vomiting of early pregnancy which are of toxic type.

3. Corpus luteum extract in treatment of toxemia of early pregnancy should not be given by the intravenous route.

4. The dosage must be determined for each patient; dosages recommended are too high.

5. Small dosages frequently repeated and by intramuscular injection is the logical method to employ.

6. Corpus luteum extract given intravenously can cause abortion.

1107 Thirteenth Avenue.

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PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

ANEURISM OF THE ILIAC ARTERY

F. T. BILLINGS, M.D.

Aneurism of the common iliac artery is one of the rarest forms of aneurism. The clinical symptoms are vague, and the diagnosis is fraught with great difficulty. Comparatively few cases have been reported in the literature, and generally in these, unless tumor formation developed, the diagnosis was extremely uncertain.

The following patient was admitted to the Medical Service, Western Pennsylvania Hospital, April, 1922. J. B. H., male, large, overweight individual, suffering from severe cramps in abdomen, weakness and nausea. He never had any serious previous illness, and believed he was exceptionally healthy. Two or three times during the past year he complained of a moderately sharp pain of short duration in the lower abdomen. This occurred each time during exercise, which he believed was due to muscular strain. About 9 a. m. on the day of his admission to the hospital, following a bowel movement, a severe pain suddenly occurred in the left lower quadrant, sharp, cramp-like in character, extending to some extent toward the precordium. It was so severe that his skin became covered with a cold sweat. An hour later he was again seized with excruciating pain in the lower abdomen, now including the right side as well as the left. He experienced a constant desire to evacuate his bowels, which if successful, he believed would bring him relief. Examination showed the abdomen to be distended and tympanitic. There was tenderness and slight rigidity over the lower half of the abdomen. White blood count 13,000. Urine showed a faint trace of albumin and many hyaline and granular casts. When last seen about ten o'clock that evening his condition was excellent, the abdominal pain had practically disappeared, and he expressed himself as being comparatively comfortable. The night report was excellent. In the morning he rang for the nurse and complained of acute and severe pain in the lower abdomen with a feeling of suffocation. In a few moments he became speechless and died.

Autopsy showed the following:

On opening the abdomen, a large amount of fluid escaped. At the same time large bloody clots were present, especially in the right hypochrondrium around the liver. The mesentery showed a hemorrhage in its substance with a rupture of the peritoneum. The entire pelvis, including mesentery, was found to be infiltrated with a large amount of blood which extended behind the ascending colon almost to the liver. The hemorrhage was so extensive that the retroperitoneum and its fatty tissue were pushed forward and the pelvis was filled with this infiltrated blood behind the peritoneum.

The base of the aorta showed a few atheromatous areas but otherwise was quite smooth. The arch, thoracic and abdominal portions contained numerous large and small atheromatous areas with some areas of fibrosis. A number of atheromatous areas had ulcerated and small blood clots were attached to them. Parallel lines were not much in evidence. The larger branches from the aorta showed the same changes as the aorta. The left common iliac was greatly dilated to the size of an apple, and this had ruptured on its anterior surface, producing the above hemorrhage. There were no blood clots in the aneurysmal sac. This sac was a marked dilatation of the vessel wall, which showed the atheroma and fibrosis of the aorta. The right iliac was slightly dilated but showed nothing so pronounced as the left. The elasticity of the aorta was quite normal.

This case was, therefore, a rupture of an aneurism of the left common iliac artery, with a moderate dilatation of the right. The walls of the artery showed undoubtedly syphilitic infiltration. There was no diagnosis made before death. The brief time of observation, the vague and indefinite history, the negative circulatory and abdominal examination, with the absence of tumor mass, all militated against a correct interpretation.

SOME IMPORTANT POINTS IN THE SURGICAL TREATMENT OF TOXIC GOITER

JOHN ALEXANDER, M.D.

Case 1.—Patient a woman aged 37 years, married. Admitted August 2, 1921, with history of palpitation of heart, nervousness, loss of 25 pounds weight in four months, diarrhea, occasional nausea and vomiting, excessive perspiration, easily excitable and irritable. Gradual onset over four or five months, with enlargement of thyroid. Slight exophthalmus with von Græfe and other eye symptoms present. Right lobe and isthmus of thyroid firm; left lobe soft; no adenomatous tissue. Heart: diffuse pulsation, slight enlargement, systolic murmur, pulse averaging 100 to 120.

August 5, 1921: Basal metabolism—plus 94%. Patient was nervous and excitable during test and showed the usual high rate of first test.

August 13, 1921: Basal metabolism—plus 40. Patient had been under medical treatment with complete rest in bed since admission, with very slight if any improvement in general condition or pulse rate.

August 15, 1921: Under local novocaine anesthesia, a bilateral ligation of superior thyroid vessels performed.

August 30, 1921: Basal metabolism, fifteen days after operation, was plus 14.

On discharge from the hospital the patient was asked to return in three months for the removal of the gland, but she was so much improved that she believed an operation unnecessary. She was readmitted June 16, 1922, with a recurrence of all the symptoms as pronounced as on her former admission. Pulse rate was 100 to 130.

Basal metabolism—July 2, 1922—plus 87.
" " July 8, 1922—plus 37.
" " July 17, 1922—plus 26.
" " July 23, 1922—plus 25.

When the metabolic readings, in conjunction with the physical signs, show no improvement over 2 or 3 successive weeks under complete rest and medical treatment, the maximum of gain has usually been reached and operation has to be considered as the next step in treatment.

July 29, 1922: Under local novocaine anesthesia resection of the gland performed. She had a very marked reaction immediately following operation. Her temperature on reaching her bed was 104, pulse above 180, and she was delirious. She was packed in ice, as advocated by Crile, with immediate drop in temperature and rapid improvement in symptoms. Patient made a gradual good recovery and was discharged August 29, 1922, with a pulse of 100. She has since gained 35 pounds in weight.

Case 2.—A woman, aged 41 years, showing hyperthyroidism, with enlarged gland, pulse 120 to 130, extreme nervousness and palpitation.

September 14, 1921: After ten days rest in bed at hospital, with no noticeable improvement, the left superior thyroid vessels were ligated under local anesthesia, with fairly severe reaction and pulse of 150. There was definite improvement in general condition of nervousness, etc., but not in pulse rate; so September 21, 1922, the right superior thyroid vessels were ligated.

During the next two months she gained 21 pounds and could not be convinced that her improvement was only temporary and that further surgical treatment was advisable at this time. In June, 1922, there was gradual recurrence of symptoms and she was readmitted August 13, 1922, her symptoms being less marked than at her previous admission. Bilateral resection of the gland was done August 25, 1922, with considerable nervous reaction, but the pulse did not exceed 150. Marked improvement followed operation and she was discharged September 13, 1922, with a pulse of 80.

Case 3.—Young woman, aged 30, admitted July 11, 1921, with a history of weakness, nervousness, palpitation, dysentery and the other symptoms of toxic thyroid. Her present weight was 84 pounds. Onset two years previously and has been in bed for last five weeks. Worked until then. Examination of thyroid showed a moderately enlarged gland, bilateral and soft. No eye symptoms.

Pulse rate, at rest in bed, 120 plus.

Basal metabolism July 31, 1921, after 2½ weeks in bed, plus 40. Fall in pulse rate to 110.

August 2, 1921: Under local anesthesia, ligation of left superior thyroid. Moderate postoperative reaction —plus 140 for several days.

Basal metabolism August 10, 1921—8 days after ligation—plus 17.

Pulse rate previous to second ligation—100.

August 11, 1921: Ligation right superior thyroid. Pulse rise to 130, with moderate reaction.

Discharged August 23, 1921, with pulse below 100.

About 7 months later, toxic symptoms gradually returned, following an attack of tonsillitis, and she was readmitted to hospital July 31, 1922, with pulse above 120 and fairly marked toxic symptoms. Improvement was noticeable with rest in bed, but not so much as desired. September 2, 1922, one month after admission, had a hemithyroidectomy. The pulse was very rapid both during and after operation, and condition was fairly serious for several days. November 4, 1922, was discharged with improvement, which has continued.

We have all seen the very sick thyroid patient, with a high pulse rate, cardiac impairment, etc., subjected to a thyroidectomy a day or two after admission to the hospital, without preliminary study, rest, medical treatment or ligations, and death resulting within a few hours after operation. It is particularly in this type of case that a ligation would have been followed by a sufficiently marked reaction to have indicated the danger of any operation at that time.

If, after complete rest in bed for several weeks, followed by a ligation of vessels, first on one side and a week or so later on the other side, there is a very mild reaction as indicated by only slight rise in pulse rate and in toxic symptoms, there is a reasonable certainty that the removal of the gland will be a safe procedure. But if there should be a rise in pulse to 150-180 with all the accompanying symptoms of extreme nervousness, restlessness and prostration, then it is safer to wait several weeks before doing a second ligation. Basal metabolic readings, taken from week to week will probably show a lower rate, and there will be some improvement in general condition. The reaction after the second ligation is not as a rule so severe and is a definite indication of the advisability of attempting resection in the near future. After ligation of both superior thyroid vessels and rest, by which is meant 12 hours in bed at night and 2 or 3 hours each afternoon, with no physical or mental exertion, the maximum of improvement occurs usually within about three months. In the severe toxic case, it is advisable to defer operation until this time.

Another consideration is the amount of gland tissue that may be removed when the thyroidectomy is performed. There is usually too much rather than too little thyroid tissue remaining after operation. This is due to the difficulty in determining the amount of gland lying posterior and lateral to the trachea, and to the fear of injury to the recurrent laryngeal nerve or parathyroid. If possible, a resection of both lobes and isthmus would be the desired operation, but in the anxiety to remove the maximum of gland

and obtain a relief of symptoms, there is always the danger of carrying the patient too far past the zone of safety. The result to be sought for in all operations upon the toxic goiter is the reduction to as nearly normal as possible of the hyperactivated thyroid tissue, without mortality. It may be possible to do this in one operation, or several may be required. In the very toxic case, one can decide previous to operation, just how much it will be possible to remove. The general condition of the patient during operation, and the reaction to previous ligations must be the guide to the surgeon. He must be content to stop at any stage, no matter how little gland has been removed, if the condition of the patient warrants it, and remove more thyroid at a subsequent operation. If the resistance of the patient is misjudged and she leaves the operating table in poor condition, with high temperature, rapid pulse, etc., an ice pack as suggested by Crile is really beneficial, and the patient should be given large quantities of water under the skin and by bowel.

Frederick B. Utley, Secretary.

Villon Revised: Where are the serums of yesteryear?

Dr. O. Pine queries: Program Committees, instead of waiting for volunteers ardent for the limelight, why not ask the modest, worthy decorators of the rear benches to prepare and read papers occasionally? As Montaigne has said, "There is no allurement like modesty."

Dr. O. Pine queries: It is glorious to be acclaimed a great man in your profession or society. But how much more glorious would it be to share that glory with those associates without whose praiseworthy efforts glory would be a stranger to you?

Dr. O. Pine queries: Is that ardent pursuit of the links indicative of your fondness for golf, or a vicarious method of attaining medical eminence in the eyes of your lay golf fellows?

A confrere addressed me thus one day: "Say, O. Pine, you are not so loftily correct as to deluge your critical queries upon us in the manner you do."

Quoth myself: "Dear brother, my own faults have largely inspired my queries, and I am just as desirous of cudgeling my own ugly defects as those of others. In others I see myself a great deal."—*O. Pine.*

Dr. O. Pine queries: Why is it that the Bonnie Brier Bush sentimentalists persist in lamenting the extinction of the "good, old family doctor"? Are not there still many of the gems to be found in the lists of county medical societies, every whit as energetic and self-sacrificing in answering the call of the sick and distressed? Is not the trouble, rather than that there are no longer any Weelum MacLures, that there are no longer any observant Ian McLarens?

COMMUNICATIONS

To the Editor of The Pennsylvania Medical Journal, *Harrisburg, Pa.*

Dear Sir:

I am endeavoring to make a complete study of the distribution of human actinomycosis in this country. The number of cases reported in the literature is surprisingly small, and I know that the disease is not so rare as is sometimes thought.

I shall greatly appreciate hearing directly from anyone who has had experience with this disease, and desire to know concerning case histories the following: age, sex, occupation, residence, state in which the disease was contracted, location of lesion, duration of symptoms, and any special points of interest connected with the treatment, outcome of the disease, or necropsy findings.

A. H. Sanford, M.D.,
Mayo Clinic, Rochester, Minnesota.

December 7, 1922.

To the Editor of The Pennsylvania Medical Journal, *Harrisburg, Pa.*

Dear Sir:

The undersigned is desirous of obtaining information regarding the prevalence of infectious jaundice in your state.

The disease is nonreportable and information regarding its prevalence cannot, therefore, be obtained from boards of health. I shall be grateful for any reports of outbreaks which your readers may care to send me.

George Blumer, M.D.,
195 Church Street, New Haven, Conn.

November 24, 1922.

To the Editor of The Pennsylvania Medical Journal, *Harrisburg, Pa.*

Dear Sir:

The following resolution was adopted at the stated meeting of the College of Physicians, Philadelphia, held December 6, 1922:

Whereas, It is absolutely essential to have complete and correct birth records in order to determine the infant mortality rate and secure progress along the lines of infant conservation; therefore, be it

Resolved, That the College of Physicians of Philadelphia would respectfully urge the Fellows of the College and the general medical profession of Philadelphia to make accurate reports of every birth under their care, within ten days, as required by law. Be it further

Resolved, That a copy of this resolution be published in the Roster and in The Pennsylvania Medical Journal.

John H. Girvin, Secretary,
College of Physicians of Philadelphia.

December 7, 1922.

Dr. O. Pine queries: How often have we not heard of steel kings, coal barons, gas magnates, oil kings and even baseball magnates—yea, even "Sultans of Swat"? And why not of medicine kings or surgery magnates?

Dr. O. Pine queries: Should we not conduct our measures against charlatans with prudence, lest overzealousness promote a publicity very pleasing to them and impel their victims to shower them sympathetically with flowers?

THE PENNSYLVANIA
MEDICAL JOURNAL

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EDITORIALS

THE ATLANTIC MEDICAL JOURNAL

One of the visions of that many-sided and far-seeing man, Dr. Alexander R. Craig, late Secretary of the American Medical Association, was the consolidation into one publication of the journals of the medical societies bordering Pennsylvania on the east and south, thereby centralizing medical thought and purpose.

This suggestion was made to the Board of Trustees of our Society at a meeting about one year ago. Such a favorable impression was created that the Committee on Publication of the Journal was authorized to suggest to Dr. Craig that he, in an unofficial capacity, present the matter to the Medical Societies of the States of Delaware and Maryland, with a view of ascertaining their willingness to enter into such an agreement.

The Medical Society of Delaware was receptive. A conference between the Publication Committees was held and a tentative agreement drawn up, which was presented to the Board of Trustees at the meeting in Scranton. The report carried with it a recommendation that a representative from our committee be sent to explain the details of the matter to the House of Delegates of the Delaware Society at its annual meeting on the 10th of the same month.

The question of the appointment of a representative was referred to the House of Delegates, where Dr. C. L. Stevens moved "that the House of Delegates authorize the Board of Trustees to take any action they think suitable regarding the future name and conduct of the present Pennsylvania Medical Journal." Dr. T. B. Apple was delegated and attended the Delaware meeting. The proposition was formally accepted and full power given to its committee for final action.

We are, therefore, pleased to announce that in April next you will receive the first number of "The Atlantic Medical Journal," the successor to the Pennsylvania Medical Journal which for so many years has been a regular visitor to your desk. We bespeak for the newcomer your careful consideration and hearty coöperation, with the hope that its influence may tend toward a closer association of the profession of the two states and that very shortly the scope may be so widened as to bring to a consummation the vision of our late friend.

The Publication Committee.

COÖPERATION

The year of 1923 promises to be a significant one for the medical profession of Pennsylvania. Our State Medical Society has many important interests, propably the most active of which this year will be the legislative.

We believe it to be the desire of the profession that such medical legislation be enacted as will best serve the interests of the people. The large majority of the profession are in earnest in their efforts to serve the people well. The doctors are faithful and honest in their endeavor to alleviate sickness and distress and desire laws which will protect them in their important work. They are opposed to any legislation that does not aim to improve the present high standards of medicine.

We, therefore, appeal to the membership of this great Society to support President Litchfield and the Medical Legislative Conference in their policies and program. Each member should enter into this work in a spirit of coöperation and help in every way possible, and not place the whole burden and responsibility on the officers of the State Society and a small committee from each component county society. It is as much the work of the individual member as it is of those in official positions.

We believe that the physicians should keep in touch with the legislators and ask them to give us health laws and proper standards for those who are and who will be licensed to practice the healing art. They would then be able to render a more efficient service to the people and to protect them from the quack and the irregular.

We believe the profession should secure the coöperation of laymen, and have them interest themselves in proper health laws. If this spirit of coöperation can be instilled in these people there will be no question that proper laws will be enacted.

So let each doctor feel that he or she has a personal responsibility in the legislative program for the year. H. C. F.

SETTING-UP EXERCISES FOR OFFICE EMPLOYEES

Starting the week of November 13, 1922, the United States Steel Company issued an order that all officers and employees in its general offices at Pittsburgh should take setting-up exercises, in the rooms in which they are working, from 10 to 10: 10 a. m. and from 3 to 3: 10 p. m. each day. During this period all telephone messages to all departments are to be held up until the ten-minute period has elapsed.

For three weeks before the order was issued certain ones from each room were given instruction in the setting-up exercises. A great many of the boys had had this training in the army, which made it much easier to make the selection for this particular work. The women and girls are to take the exercises under the instruction of a woman.

The experiment has had only a six-day trial at this writing, but one of the men in the office told the writer that they all looked forward to the ten and three o'clock periods with interest and real zest.

The periods have been selected with a view to supplying the brain and body with fresh air at a time when there is apt to be brain fag, in this way helping to create a healthy body and indirectly making the work more efficient at a time of the day when the mental faculties begin to lag.

The men remove their coats and vests, stand back of their desks or in one section of the room, and the appointed member for that room conducts the setting-up exercises for ten minutes. Each office in this building is doing the same thing, thus making it unnecessary for the men to leave their individual rooms and preventing any loss of time.

This is a movement in the right direction. It can so easily be carried out that it is a wonder someone did not institute it sooner. It would be well for some of the large banking institutions, as well as manufacturing plants, to imitate the United States Steel Company in regard to this matter. It is a safe prediction that there will be fewer cases of illness among employees of firms who institute this procedure, that better health will accrue to the individual who takes the exercises, and that from a monetary standpoint he will be ahead at the end of the year.

The United States Steel Company is to be congratulated on starting this movement.

T. G. S.

RENAL FUNCTION TESTS

Tests for the determination of the functional activity of the kidneys are of great interest alike to the laboratory investigators and the clinicians. For several years a very extensive amount of research has been carried on by animal experimentation and clinical study. The literature contains many articles on this subject and lengthy discussions are common in medical meetings. Although there is much that remains to be learned, yet there have been brought to light certain very important facts and principles.

In the discussion of this problem of tests for renal function one often notes considerable confusion where confusion could not exist if those participating in the argument would bear in mind certain principles of renal activity that are proven. Such confusion is evident in the discussion of renal function, as reported in the *Journal of the A. M. A.*, October 21, 1922. Everyone who is considering the question of tests for renal function and evidences of renal insufficiency should keep clearly in mind two well demonstrated facts: First, the kidney is a multi-functional organ and hence there could not be any single test that would reveal the state of these many functions; second, the functional capacity of the kidneys is normally four or five times greater than is required by the usual metabolism; hence there must be very marked reduction in functional capacity before retention takes place and symptoms appear. Let us consider these two facts in greater detail.

The kidney is a multi-functional organ. In general, its function is for the elimination of certain waste products. These waste products are: (a) nitrogenous substances, (b) certain nonvolatile acids, (c) salts, (d) water, (e) enzymes, and (f) pigments. Although these substances are eliminated "by the kidney," yet the mechanism of excretion is in each case independent of the others. This has been demonstrated so many times it canot be disputed. Thus, there may be impairment of functional activity as regards nitrogen, with all the other waste substances coming through normally; or there may be inability to excrete chlorides, with the others normal; or, two or three groups may be excreted with difficulty, the others being excreted easily; or, again, as is most often the case, the damage may be diffuse, with general impairment of all the functions, but this impairment being unequal, involving some more than others. Such being the case, how can anyone hope to develop any single test which will indicate the activity of these many functions? As a matter of fact, each functional test discloses the ability of the kidney to excrete the particular substance used in the test, and that substance only (and only at the time the test is made). The urea test shows the functional capacity for urea; the chloride test the capacity for chlorides; the 'phthalein test, the capacity for 'phthalein. Inferences may be drawn, based on clinical experience, such as, that 'phthalein excretion parallels urea excretion; but fundamentally each test shows the ability of the kidney to excrete the substance used. Bearing this in mind will do much to ward off confusing discussion when someone attempts to set up as "the best" any single functional kidney test.

The second fact of importance in considering tests for kidney function is that the kidney possesses four or five times as much functional ability as is necessary to excrete the waste products of normal metabolism. All know the impunity with which one kidney can be removed. Experimentally, one kidney and half of the other can be removed from an animal and no retention result. Hence, it is evident that there must be a very marked reduction in functional capacity as regards any waste substance before retention will occur and this substance accumulate in the blood. Therefore, chemical examination of the blood does not reveal functional incapacity until it is far advanced. It is absurd, then, to advocate "blood chemistry" as the "best" functional test, for there is no retention whatever until the functional capacity has been reduced to less than twenty-five per cent of the normal. The determination of the waste products in the blood is, of course, invaluable for çertain purposes. It often reveals retention even before symptoms are noted; it shows beyond doubt the cause of symptoms; and it tells accurately the amount of the retention. "Blood chemistry" is valuable, but it cannot be used alone in determining renal efficiency, any more than can any other single test.

Bearing these points in mind, the futility of attempting to rely on any single test for the determination of the functional capacity of the kidney is evident. One must consider separately the functional capacity for each group. Various tests must be used, if this is to be done thoroughly and completely. If the functional impairment is advanced, there will be an accumulation of waste products in the blood and tissues, symptoms will develop, and chemical determination of these substances in the blood will reveal what groups are retained and to what degree.

R. R. S.

THE DOCTOR IN THE COUNTRY

The writer has been privileged to be present at meetings of a large number of the county medical societies in this state during the past few years. It has indeed been a great pleasure to note the activity, earnestness, up-to-dateness and usually large attendance of the members at these meetings. Sometimes, during stormy weather, doctors have traveled many miles under great difficulties to attend the meetings.

The "doctor in the country" differs entirely from the usual conception of the "country doctor" as generally described. There is no reason for the "doctor in the country" in our present age, to feel that he is a back number as compared with his brother in the urban centers. The mail and parcel post service, improved roadways and conveniences of travel keep him in intimate touch with the latest happenings in things medical and surgical at their sources.

We are particularly pleased to notice that many programs for the county medical society meetings list their members for reports of the high lights of the State Medical Society session at Scranton. The reviews have been well presented. The various branches have been well represented, and enthusiastic reports as to the high character of the scientific exhibit have been emphasized. This fact means that the "echo" of the state meeting will eventually be carried to all corners of the state and much permanent good will result therefrom.

We have found the "doctor in the country" to be well supplied with electrical apparatus, the latest style instruments, up-to-date books and journals, and there is a greater tendency to meet each other in consultation.

While the so-called specialties are perhaps not feasible for the "doctor in the country," at the same time it will frequently be found that some physicians are better informed or better fitted along certain lines, and their fellow practitioners come to rely upon them for help, aid and assistance in the handling of cases suitable to their special attainments. This is as it should be.

The time is ripe for the establishment of hospitals in strategic centers of the rural districts. The state requirement that counties shall establish hospitals for the care of tuberculous individuals could be met by establishing a well organized hospital within convenient distance of the tuberculosis sanatorium or hospital, without much added expense to the county.

Now that the suburban communities are developing water, sewerage and electric light systems, the "doctor in the country" can secure all the modern conveniences for the comfort of himself and his family.

As a rule the "doctor in the country" is better off financially at the end of the year because of the high cost of living in the city.

Convenience of transportation for children attending the high schools will afford opportunity for continuing their education in near-by towns which offer good high school facilities, thus enabling the children to remain at home during that period of their lives.

The idea that had been extant during the past decades as to the centralization of education and the development of the university idea is now undergoing a change and the trend is to a return of the development of the small college. President Harding has well emphasized this point and many educators of large experience, whose opinion is worth while, have recently expressed themselves along this line. It is well, therefore, for the "doctor in the country" who thinks that the city offers many advantages over his present environment, to pause before he makes a move that he soon would find reason to regret should he leave a very lucrative practice in the country and move to a city where many of his ideas as to the benefits of city life will become rudely shattered.

A. C. M.

THE UNRELIABLENESS OF THE PERCUSSION NOTE OF THE BACK, IN THE LATERAL POSITION

It has frequently been observed that the percussion note of the back in the lateral position would indicate an abnormal condition in the neighborhood of the angle of the scapula, most frequently on the dependent side and less frequently on the upper side. The area of impaired resonance is usually larger on the dependent side than on the upper side. If the percussion note is impaired on the dependent side, and the patient is made to lie on the other side, the percussion note may now be found to be normal on the upper side and impaired on the dependent side. If the patient is able to sit up in bed, and both sides are percussed, no abnormality may be found on either side. There seems to be a paucity of literature on this physical phenomenon. Dr. Tasker Howard writes an interesting article in the *Journal A. M. A.*, April 30, 1921, on this subject. He reports negative necropsy findings in a patient who presented an area of dullness amounting almost to flatness about the angle of the scapula on the right side as he lay on the left side shortly before death. Dr. Howard studied a series of fifty patients, and noted the variations in the percussion note over the back, with the patient lying first on one side and then on the other. It was found that:

1. There was almost invariably a well marked change in the percussion note over a zone from two to four inches in width lying next the bed on the dependent side. The percussion note over this zone was short and high pitched, and it seemed reasonable to suppose that this is the result of pressure of the bed. The note over this area also frequently had a musical quality. There was frequently super-added a tympanitic quality.

2. In nineteen patients, comparatively less resonance was noted throughout the lower side as described by Cabot and others.

3. The effect of the shift of the level of the diaphragm on the lower border of pulmonary resonance is much more apparent in the axilla than in the back, although a change of 1 or 2 cm. may often be made out by percussion in the scapular line. However, there often appears an area of relative dullness at the base of the dependent side, which extends up to the level of the ninth or eighth rib. Of twenty-seven patients examined for this point, it was observed in nineteen. The area was not dull enough to be explained by an entire absence of pulmonary resonance. The roentgenograms suggest that this dullness is due to a thinning out of the pulmonary tissue by the dome of the diaphragm, which is crowded up on the lower side. The diaphragm is dragged away from the chest wall on the upper side, so that a thicker layer of lung lies below the percussing finger over the base of this side, and a relatively more resonant note results over this area. Compression at the lower side of the chest by the weight of the body would operate more effectively near the base of the lung, because at this point the chest bears more weight than does the upper part, which is more or less supported by the shoulder.

4. Of fifty patients examined by Dr. Howard, twenty-two showed an area of relatively diminished resonance on the upper side, which shifted to the opposite side when the patient was turned

over. In some it was perfectly apparent and in others it amounted only to a small patch, which might easily be overlooked, unless the two sides were carefully and systematically compared. It was usually observed at about the angle of the scapula, but it sometimes appears nearer the base. In some cases, this area of diminished resonance was found on one side and did not appear on the other side if the patient was turned over. It was not affected by the position of the upper arm. It could be shifted or obliterated in some instances by rolling the patient a little more forward or backward. The explanation is believed to lie in the fact that when a person lies on the side there tends to develop a scoliosis due to sagging downward of the spine. This results in a spreading of the ribs on the lower side, giving a relatively greater capacity and a tendency to hyperresonance on percussion. The tympanic quality in the dull one described by Vierordt is due to this factor. The ribs are crowded together on the upper side. The upper side expands less readily and presents to the percussing finger a greater rib surface and less intercostal space. All this tends to a diminished resonance on percussion. The writer has frequently noticed these discrepancies in the percussion note of the back, when the patient is lying on the side, and it is recommended, if the patient is unable to stand or sit up, that the percussion note of both infrascapular regions be compared with the patient on one side and then on the other, and if there is impaired resonance suggestive of consolidation, that these findings be further compared with other physical signs indicative of the existence of a pathological condition, before reaching the conclusion that there is anything abnormal in the chest posteriorly.

W. E. H.

DEVELOPMENT OF A SISTER INSTITUTION

The Philadelphia College of Pharmacy and Science, of which former Surgeon-General of the Navy Dr. William C. Braisted is president, has entered upon a campaign to raise $2,000,000 to increase its endowment fund and to erect three buildings.

Ground has been purchased at Forty-Third Street and Woodland Avenue, in West Philadelphia, and active preparations are being made for the erection of the buildings. One of the new buildings is to be devoted to educational work, one to administrative work, and the third to research. The corner stone of the Educational Building will be laid on Founder's Day, February 23, 1923, when the campaign for funds will end. The amount raised to date approximates $400,000.

In the last catalogue number, issued March, 1922, announcement was made that the college will limit the size of its classes in order to assure thorough instruction and adequate facilities for students who may be enrolled. Admission will not be a matter of priority of application, but will be based upon the fitness of the candidate. The first-year classes of the Ph.G. Course will be limited to three hundred students. No limit has as yet been placed on the B.Sc. Classes nor on the postgraduate classes, but the right is reserved to terminate the matriculation period when the number enrolled fills the capacity of the laboratories provided for such courses.

Members of the medical profession are bound to be interested in the success of the above movement.

Dr. Braisted has recently emphasized the fact that during the past two decades most all of the work in physiologic therapeutics has been in the hands of the laboratories of the commercial houses in this country, with the result that whatever propaganda has been issued by them, regardless of their underlying motive, has not been checked up or verified by clinicians, so that a great mass of pseudoscientific literature has accumulated that is practically worthless from a scientific or clinical point of view. With the large number of physicians already on the faculty, and renewed interest on the part of the medical profession in therapeutics, it is logical to expect that the honorable standing which has been enjoyed by the College of Pharmacy and Science will be greatly enhanced, and the lines of attraction between Pharmacy and Medicine will become more nearly parallel. A. C. M.

TROPICAL DISEASES

Before the time of the World War, tropical diseases were thought of in terms of geographical origin and existence, as limited to the tropics or sub-tropics. Since that time there have been many cases of so-called tropical diseases that have been transported to the temperate zones. Cases of dengue, relapsing fever, tropical dysentery and abscess, trench fever, and others have been observed in the northern states of this country during the past couple of years. A study of the previous history of a case as pertains to the sojourn in other countries or states may reveal an important etiological relation to the present illness. A. C. M.

THE TONGUE IN DISEASE

For over ten years the writer has been interested in the study of the under surface of the tongue in diseased conditions. Much valuable information can be gleaned by this simple procedure. The pallor and watery, mucoid secretion commonly seen in pulmonary tuberculosis is a very frequent finding. Discoloration by bile is frequently noted early in a case of jaundice. Engorgement of the large veins on either side of the median raphe is noted early in a case of cardiopulmonary weakening with its accompanying hypostatic congestion of the lungs, such as occurs in a high degree of mitral stenosis, mitral regurgitation, emphysema and other allied conditions wherein the right side of the heart is made to bear the brunt of the work in compensation. Prominence of the arterioles, showing fan-shaped or arboraceous distribution of the terminal vessels is commonly seen in arterio-capillary fibrosis. Petechial hemorrhages in the mucous membrane have also been a common finding. Glandular enlargements, sometimes due to local infection or as part of a general lymphadenopathy, may also at times be noted.

We have come to attach more diagnostic and prognostic value to this finding than to engorgement of the superficial veins of the abdomen, the so-called "Caput Medusae" in portal cirrhosis.

A. C. M.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

GROUP COÖPERATION vs. THE WHOLE PROFESSION COÖPERATING

It was in an "experience meeting" that Brother Brown arose and said: "Brothers and sisters, twenty years ago the Lord filled my bucket with salvation." Brother Jones, not to be outdone, claimed that "fifteen years ago the Lord filled my bucket with salvation until it run over, and it has been filled and run over every day since." Brother Smith was of different type, probably a little more selfish, and he arose and said: "Ten years ago the Lord filled my bucket with salvation and nary a drop has gone in since and nary a drop has gone out," whereat Brother Jones expressed the opinion that "if Brother Smith's bucket was filled with salvation ten years ago and never a drop went in and never a drop went out in all that time, Brother Smith's bucket must be full of wiggletails."

Brother Jones was doubtless the more happy and useful man of the three; he was coöperating, every day receiving good things and every day giving them out. His philosophy applies in medicine, and there are many medical men whose buckets are full of wiggletails. How unhappy they must be!

The isolated building is more apt to burn to the ground than is the one grouped with many others, for coöperation has provided a fire department that extinguishes most blazes while they are small. The individual in business by himself is more apt to fail than is the other individual in a partnership. The isolated tree is more apt to be struck by lightning than is the tree in the forest. Thus it is quite generally and in all departments of business and professional life. It is not competition but coöperation that is the life of professional practice.

"Salvation am free" was the text of a colored clergyman, who at the close of the sermon took up a collection, when a brother on the back seat chided him for making salvation cost money. Immediately the preacher came back at him in this wise: "Shet your mouf, brother; salvation *am* free, just like de watah in de creek a mile away ef you tote it up from dar; but if you axes de watah company to pipe it up to yo' house, you done got t' pay fer de plummin'." Coöperation never comes free if you count your own labor for anything; it always costs.

San Francisco and Los Angeles have long been rivals, but the year following the earthquake and fire in the former city was the most disastrous in the modern history of Los Angeles. Doctor, don't think that you ever really profit from the disasters attending your professional colleagues and neighbors; they hurt you as well as them.

Thus it is that coöperation is not incompatible with selfishness; it is safer and more profitable for the individual to coöperate than it is for him to stand alone, even though it costs him something to run with the pack; and coöperation with your fellow in his troubles eases them and in the long run is more profitable for you.

Medical men and women are learning the lesson of coöperation, but they are divided in opinion whether this coöperation should be limited to a select group or be extended to the whole worthy professional personnel. The unhappy division of the profession into sects, many years ago, is responsible for the feeling among so many that coöperation should be only among certain groups. They are like the Irishman who was given a coil of rope to do a certain job and who said: "Sure, if it was too short I could splice it; but it's too long, and now what can I do?" The profession is not *too* long, for there are many jobs ahead and emergencies to be met, and we never know what hour may demand the services of every man of us.

Coöperation is too often viewed as "Me and mine is one," like Pat viewed it when his brother and two strangers were sent out with him on a job requiring four men. Pat called them together and called the roll in this way: "The two McFlannigans are wan, an' O'Calligan is two, an' McGinness is three. Faith an' I thought there were four of us." So he went all over it again, and it was only by making a ball of soft mud and having every man stick his nose into it that he finally found there were four all right. Don't forget that when the noses are counted every man counts for one and that it is impossible for any group to count simply as one and the rest be negligible; things won't work that way. You may be in a group clinic and you and your fellows in the group fondly imagine that the community counts the other chap out; but you are mistaken, for no community will view the matter in that light.

Self-righteous coöperation will not work. It is easy to sing:

"The bells of Hell go ding-a-ling-a-ling
For you but not for me.
The sweet voiced angels sing-a-ling-a-ling
Through all eternity,
Oh death, where is thy sting-a-ling-a-ling,
Oh grave, thy victory?
No ding-a-ling-a-ling, no sting-a-ling-a-ling,
But sing-a-ling-a-ling for me."

That so-called hymn sounds awful to-day, but gangs of self-righteous "saints" used to sing it as a warning to the "wicked." Now let us not forget that it is easy to engender a class feeling, even in the medical profession. Saint A and Saint R and Saint S get together and consign the "sinners" to "outer darkness, where there is wailing and gnashing of teeth." But don't forget that the wailing and gnashing of teeth is heard by a sympathetic world outside and the "sinners" become martyrs in public estimation. Perhaps some of them *ought* to be consigned where the above hymn sends them, but it is a great deal better to get behind a man and push him up than to grab him by the heels and pull him down. He may pull you down along with him.

We hear a vast deal to-day about medical economics and the doctor being a poor business man and how necessary it is to wake him up to his grand and glorious opportunities to make money. That is all right within bounds and some need to be waked up; but don't forget that you are making balls for the medical commercialist to throw, with you at the bat with the sun shining in your eyes; so it is three strikes and out for *you*. This commercialist starts a so-called medical journal to conserve the business interests of the profession, so he says, but really to start a row with the worthy element in the profession and give publicity to the kickers and soreheads that ought to be spanked and sent to bed without their suppers. He fills his pages with scare-head stuff and rotten advertisements. This chap is strong on coöperation in the profession; but all it comes to is an effort to break down the rational coöperation already existing through the conservative action of our great medical organizations and to substitute for it a grab game for the commercialists. Do they work heart and soul for organized medicine? They do not. "Little Bo Peep, she lost her sheep, and didn't know where to find them; but let them alone and they'll come home and bring their tails behind them." They will find, after a while, that it is poor policy to enter the sheepfold by climbing the wall. Neither self-righteous coöperation nor me-too coöperation get the profession into anything but a peck of trouble.

Group clinics are coming into style. Some of them are organized by worthy and eminently qualified men. There is a real demand for something of the kind and these gentlemen are trying very honorably to supply this need. They are risking their own money and are hoping to get it back some day. They know that they cannot make a lot of money out of these clinics, at least not for some years. Nevertheless, it will only be by careful study and checking up of plans—those that succeed and those that fail—by conservative medical societies and the informed public that we can evaluate these honorable efforts and so plan these groups that they will not militate against the interests of the profession and the public as a whole. There is a great danger, already appearing, that the medical commercialist will seize upon the idea and ruin it.

When we view the whole subject of coöperation, looking on it from all angles, it appears that rational and public-serving coöperation is possible only when organized medicine, after careful study, evolves plans that are fair to all interests. We must not be impatient. It is perfectly right and proper to study medical economics and try to improve the proper business outlook of the profession; but if we are one-sided, selfish, self-righteous, radical or narrow we will only bring our great profession into disrepute and its personnel to loss. The American Medical Association and all of its constituent societies need to study the problem.

Thomas S. Blair, M.D.,
Harrisburg.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

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THE NEW MEDICAL MAGAZINE FOR LAYMEN

In recent issues of the *Journal of the American Medical Association* appears the long awaited announcement of the early appearance of a medical magazine for lay readers. Authorized by the 1922 House of Delegates and published by the Board of Trustees of the American Medical Association, this monthly magazine will be devoted to the development of individual and community health, based on the accumulated experience of generations of medical scientists in sickness prevention. A special limited subscription offer of eight months for $1.00 is at present open to fellows of the association. We trust that our members will promptly take advantage of this limited offer.

The world's best writers, both scientific and popular, will strive to present their discussions in brief and simple terms. Many of us have dreamed for years of an opportunity to create for the mind of our intelligent public a medium for authoritative information on the altruistic phases of medical practice. Our opportunity apparently is at hand. Our organization, thoroughly democratic, creates this new magazine, and its initial success will depend on our contributions to its *début*. We believe that this magazine should be received by the public health organizations and the public schools throughout the State of Pennsylvania, and to that end respectfully recommend to the various county medical societies that the trial subscription above mentioned be issued complimentary on behalf of the county medical societies to the superintendents of such organizations.

Let us welcome "Hygeia," a journal of individual and community health, founded and published by the American Medical Association.

The Board of Directors of the Allegheny County Medical Society at their meeting on December 19th not only adopted the above recommendation, but they also authorized the trial subscription in the name of each member of the Allegheny County Medical Society. This action guarantees the new Journal a list of approximately fifteen hundred subscribers in Allegheny County and assures that many laymen will become well acquainted with the publication.

EDUCATION VERSUS SECTARIANISM

Regulations for practitioners of the healing art in Pennsylvania are, legally speaking, classified as are the regulations for any other occupation, trade or profession. These regulations are for the public good, and are not enforced for the benefit of the legalized members of any trade or profession. Since the people of Pennsylvania for their own protection have imposed restrictions on those who wish to treat the sick, surely it is the business of the public to determine the conditions and to administer the machinery of the state's supervision.

As far as the police power of the state is concerned, there should be no sectarianism in the practice of the healing art. The state, in granting license to practice, does not place its stamp of approval on any system of sickness treatment. The state's action should be interpreted as meaning that the individual thus licensed has demonstrated the possession of the knowledge and training required by the state in a single standard of preliminary education. Such individuals should be given the state's permission to practice, and such individuals' services should be available to any sane adult without further supervision by the state, except in the treatment of communicable diseases.

Does this not make the problem entirely educational, and does not the responsibility for the elevation and defense of the single standard for all healers belong entirely to the public? Let us as members of the organized medical profession cease to refer to the cults as different systems of treatment, but constantly in our discussions with laymen speak of the necessity for a common standard of education preliminary to licensed treatment of the sick. Let us as individual physicians devote more effort to the prompt relief of our patients' complaints and to our own knowledge in the application of all forms of therapy.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to December 15th:

ALLEGHENY: *Transfer*—Thomas L. Aye, Brackenridge, from Armstrong County Society. *Deaths*—A. Ralston Matheny of Pittsburgh (Jeff. Med. Coll. '98), from pneumonia, Dec. 10, aged 48; Sydney K. Fenollosa of Pittsburgh (Univ. of Penna., '02), from pneumonia, Dec. 11, aged 49.

BRADFORD: *New Members*—Estes H. Hargis, Robert Packer Hospital, Sayre; Leo. J. Laux, Sayre.

CARBON: *Death*—Charles T. Horn of Lehighton (Coll. Phys. & Surg., Baltimore, '78), Nov. 20, aged 74.

ERIE: *New Member*—John H. Lloyd, R. D. 2, Erie. *Removal*—Arthur G. Davis from Brookline, Mass., to 716 Sassafrass St., Erie. *Death*—Thomas Purcell of Erie (Univ. of Buffalo, '88), Dec. 8, aged 71.

LACKAWANNA: *Reinstated Members*—John W. Lyons, Jessup; Walter E. Loftus, Carbondale; Philip A. Lonergan, 706 Main St.; Helen Houser, Bowman Bldg.; W. M. Donovan, 302 Pittston Ave.; W. W. Probst, Dime Bank Bldg.; Leo G. Sweeney, 1206 Marion St.; Edmund P. Larkin, Bliss-Davis Bldg.; Charles S. Gelbert, 917 Capouse Ave.; Paul E. Kubasco, 856 Capouse Ave.; George J. Berlinghof, 1539 Wyoming Ave., Scranton.

LEHIGH: *New Members*—Philip F. Newman, 26 S. Seventh St.; Daniel J. Langton, Sacred Heart Hospital, Allentown.

LUZERNE: *Reinstated Members*—Z. L. Smith, Nanticoke; Isaiah C. Morgan, Nanticoke.

LYCOMING: *New Member*—Harry C. Fuller, Jersey Shore. *Transfer*—William Devitt, Allenwood, from Philadelphia County Society. *Death*—Fuller S. Derr of Watsontown (Jeff. Med. Coll., '84), Dec. 5, aged 62.

MERCER: *Death*—Addison E. Cattron of Sharpsville (Cleveland Med. Coll., '94), Dec. 6, aged 60.

MONROE: *Reinstated Member*—David C. Trach, Kresgeville.

NORTHAMPTON: *Death*—Arthur D. Reagan of Easton (Long Is. Med. Coll., '90) recently, aged 67.

NORTHUMBERLAND: *New Member*—Emily R. Shipman, 211 S. Chestnut St., Mount Carmel. *Reinstated Member*—Francis J. Meek, 25 N. Shamokin St., Shamokin.

PHILADELPHIA: *Death*—Maurice Goldberg of Philadelphia (Jeff. Med. Coll., '04), Nov. 29, aged 46.

POTTER: *New Member*—J. Irving Bentley, Galeton.

WESTMORELAND: *Death*—Alva H. Caven of Youngwood (Univ. of Pgh., '01), killed at railroad crossing, Dec. 1, aged 46.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of *per capita* assessment has been received since November 24. Figures in first column indicate county society numbers; second column, State Society numbers:

For 1922				
Dec. 1	Luzerne	230	7300	$5 00
6	Monroe	16	7301	5 00
8	Northumberland	61-62	7302--7303	7 50
13	Luzerne	231	7304	5 00
15	Lackawanna	198–208	7305–7315	55 00
For 1923				
Nov. 27	Somerset	1	8	5 00
	Potter	1–10	9–18	50 00
Dec. 6	Monroe	1	19	5 00
	Lehigh	1-2	20–21	10 00
	Northumberland	1-2	22–23	10 00
9	Mifflin	1–7	24–30	35 00
12	Columbia	1–3	31–33	15 00
	Lycoming	1–18	34–51	90 00
13	Montgomery	1–15	52–66	75 00
15	Erie	2–3	67–68	10 00
	Bradford	1–15	69–83	75 00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
212 N. Third St., Harrisburg

CANCER WEEK

The following letter was addressed to each county society secretary in the state under date of November 20, 1922:

"It might be possible to stimulate activity not only on cancer, but for the purpose of other activities of a public nature, if we could report through the JOURNAL some of the results of Cancer Week, which was observed by the medical profession during this month.

"If not asking too much, would thank you to give us a brief outline of the results of Cancer Week meetings in your county."

The effort put forth by members of the profession and the people of the state should be checked up to note what results have been achieved. Since sending out these letters we have received up to the present time replies from the following county societies: Adams, Allegheny, Berks, Bradford, Butler, Cambria, Columbia, Delaware, Erie, Carbon, Chester, Clinton, Dauphin, Juniata, Lehigh, Lebanon, Luzerne, Mercer, Mifflin, Montgomery, Montour, Northumberland, Schuylkill, Somerset, Warren, Wyoming and York.

A review of the activities of each county society would require too extended an article, but it will be profitable to report the interesting results from some of the counties. We find that a large percentage of the counties' activities were conducted directly under the auspices of the county medical societies, and the members of our own State Society were active participants. While many of the county societies did not hold public meetings, yet interest was manifest, as illustrated by devoting one night to the discussion of cancer.

In Adams County a meeting was held at Gettysburg and we note 150 were present. The secretary reports that the address was appreciated and believes much benefit will be derived in the control of cancer.

From Pittsburgh, Allegheny County, we have the following:

"Cancer Week was very successful in Pittsburgh. We approached the public through many different channels, a summary of which you will find in the enclosed report. The attitude of the laity was receptive. The entire campaign met with approval.

"At first we were apprehensive that cancer propaganda would start a cancer phobia, but evidently this did not occur because of the fifty-six patients who entered our free clinic who had no definite cancer lesion, only twelve of these patients had a fear or were afflicted with a fear of cancer, and of these in only one did the phobia begin as the result of cancer propaganda."

A further detailed report from Allegheny County will be found in the County Medical Society reports of this issue.

The Berks County Chairman submits the following report:

"The following is a résumé of the activities of the local Cancer Committee:

"1. For one week previous, preparatory announcements for future articles during Cancer Week were published in the three local newspapers.

"During Cancer Week, November 12th to 18th, daily articles covering the various phases of the subject were published in the three local newspapers. This work was ably done by Dr. Sidney J. Sondheim.

"2. A special meeting of the Berks County Society was addressed by Dr. W. Hersey Thomas, on the afternoon of November 17th. The address was exceptionally fine and very well received. The attendance, sixteen, was rather discouraging.

"Dr. M. Luther Huyett arranged for the speaker for this meeting. On the evening of the same day, Dr. Lida Stewart Cogill addressed a public meeting at the Y. M. C. A. Her address was up to the Cogill standard and very well received. She showed the cancer slides. There were present about 125 people, mostly nurses and welfare workers. Three physicians were present.

"Dr. Clara Shetter-Keiser entertained Dr. Cogill and introduced her to the audience with appropriate remarks.

"3. The members of the Reading Ministerial Association were interested in the campaign and through them a large number of people were reached (we hope).

"4. Through the interest and courtesy of Mr. Harry J. Schad, movie proprietor, a number of movies in the city showed the two slides during Cancer Week.

"5. The literature sent us has been and is being distributed among the visiting nurses, hospitals, churches, industrial plants, through welfare workers, etc."

In Carbon County a public meeting was held and we quote the following from the Secretary's report:

"The activities of the Carbon County Medical Society consisted of an open meeting, to which the people of the county were invited through the daily and weekly papers of the county. The meeting was held in the County Courthouse, but on account of the inclement weather was not so well attended. Those present, however, were interested and responded when invited to ask questions. Two-thirds of the members of the Medical Society were present and many of them helped to make certain facts about cancer plain."

The Chairman of the Cancer Committee of Clinton County reports as follows:

"The campaign was opened at Rotary Meeting Tuesday noon. All doctors of Clinton County were invited to be present as guests of the Rotary Club. The objects of the week's activities were outlined and the subject of cancer discussed. Tuesday afternoon the subject was presented to the Civic Club of Lock Haven. There were approximately 100 people at these two meetings.

"The Clinton County Teachers' Institute was addressed upon the subject Wednesday afternoon. There were about 400 teachers and friends present at this meeting.

"During the week short talks were made at two different secret societies at which meetings about 250 men were present.

"A public meeting was held in the local High School auditorium Friday night at which time lectures were delivered by Drs. S. J. McGhee and John B. Critchfield, of Lock Haven, Pa. Two hundred and fifty-five people attended this meeting.

"The different newspapers gave freely of their space, publishing eight different articles. The picture houses coöperated freely also, showing different slides. The pulpits coöperated in making announcements and reading Dr. Billing's letter at their services. The public seemed to be greatly interested in this subject wherever it was presented."

The Chairman of the Cancer Committee from Dauphin County in his report submits some interesting figures as follows:

"Meetings before business men's clubs	3
Total attendance	300
Educational articles in public press	20
Minimum number reading these articles	100,000
'Dry Clinic' at Harrisburg Hospital addressed by Dr. W. Wayne Babcock	60 patients
'Dry Clinic' at Polyclinic Hospital addressed by Dr. Damon B. Pfeiffer	40 patients

"Several physicians report patients consulting them privately as a result of the knowledge received by the educational campaign. These patients had early malignant growths which they were neglecting on account of ignorance.

"Several physicians report the subject being discussed by laymen, and inquiries made in clubs and in their offices, asking for additional information, and expressing appreciation of the knowledge received through the articles in the public press. These articles were written by the heads of the public health organizations of the community, the president of the County Medical Society, and members of the committee. The campaign was conducted under the direction of and in the name of the American Society for the Control of Cancer."

The Secretary of the Lebanon County Medical Society writes as follows:

"I presume you would be interested to know how Lebanon County observed 'Cancer Week.' The chief event, of course, was the public lecture in the High School building on Thursday, November 16th. In order to insure a good attendance, the pastor of each church and the head of each social organization and those in charge of the Parent-Teacher and Child Welfare organizations were interviewed and their aid enlisted.

"So that when Dr. Basil Beltran came up from Philadelphia, he found an interested audience of about four hundred. Permit me to express the over appreciation of Dr. Beltran. He is a forceful speaker and has that happy faculty of translating medical language into words that the laity can understand and appreciate. His lecture was a decided success and did a great deal of good. Each person attending the lecture received copies of the literature which was sent us and the rest was distributed through the industries.

"I believe the cancer message got across to a large number of our people and will be productive of excellent results."

The report from Luzerne County appears in the County Society Reports, as also does that of Mercer, Montour and Northumberland counties.

The report from Somerset County developed a point which we find is important to remember in arranging for meetings in the future, and that is, that addresses prepared for lay audiences are frequently delivered to but few of the laity, as they usually do not avail themselves of the opportunity to learn something greatly to their benefit.

Quite a number of the counties report that no open meetings were held, and in others no activities developed in regard to the cancer propaganda as arranged by the American Society for the Control of Cancer. The above quotations are but a few, and yet they indicate the possibilities of the medical profession as educators of the public. If the future of medicine develops along the line which seems to be its mission—that of disease prevention through education—more and more must the members of our county societies realize the efforts that are being made through national organizations in planning for the benefit of the people and through the agency of organized medicine.

We well know the difficulty that often confronts the officers and committees of the county societies in arousing the interest of the people for their own good. It is frequently difficult to obtain a corporal's guard to attend a public lecture when it has been advertised as one relating to the discussion of health in any form. We have a great future before us in the prevention of disease, and while it is not the most alluring, because it requires devotion to effort without reward and at the same time a tendency to curtail the income; yet if medicine is to survive it must teach the public and it must receive its compensation in direct proportion to the amount of prevention which is produced.

We are certainly very much pleased with the reports received, and hope that future activities will be as effective if not surpass those of the past year.

NEW AND NONOFFICIAL REMEDIES

Tetanus Antitoxin, Purified.—A tetanus antitoxin, concentrated (*New and Nonofficial Remedies*, 1922, p. 281), that is also marketed in syringe containers of 10,000 units. E. R. Squibb and Sons, New York.

Staphylococcus Vaccine.—This product (*New and Nonofficial Remedies*, 1922, p. 306) is marketed in packages of four syringes containing, respectively, 100, 250, 500 and 1,000 million killed Staphylococcus aureus and Staphylococcus albus in equal proportion; in packages of four ampules containing, respectively, 100, 250, 500 and 1,000 million killed Staphylococcus aureus and albus in equal proportion (with a syringe); and in vials of 5 c.c., 10 c.c. and 20 c.c., each cubic centimeter containing 5,000 million killed Staphylococcus aureus and Staphylococcus albus in equal proportion. E. R. Squibb and Sons, New York.

Streptococcus Vaccine.—This product (*New and Nonofficial Remedies*, 1922, p. 308) is marketed in packages of four syringes containing, respectively, 100, 250, 500 and 1,000 million killed streptococci; in packages of four ampules containing, respectively, 100, 250, 500 and 1,000 million killed streptococci (with a syringe) and in vials of 5 c.c., 10 c.c. and 20 c.c., each cubic centimeter containing 1,000 million killed streptococci. E. R. Squibb and Sons, New York.

Typhoid Vaccine.—This product (*New and Nonofficial Remedies*, 1922, p. 310) is marketed in packages of four syringes containing, respectively, 100, 250, 500 and 1,000 million killed typhoid bacilli; in packages of four ampules containing, respectively, 100, 250, 500 and 1,000 million killed typhoid bacilli (with a syringe); and in vials of 5 c.c., 10 c.c. and 20 c.c., each cubic centimeter containing 1,000 million killed typhoid bacilli. E. R. Squibb and Sons, New York.

Typhoid Vaccine Combined, Immunizing.—A typhoid vaccine (*New and Nonofficial Remedies*, 1922, p. 310) that is marketed in packages of three syringes, one containing 500 million killed typhoid bacilli and 375 million each of killed paratyphoid A and paratyphoid B bacilli, and each of the other two syringes containing 1,000 million killed typhoid bacilli and 750 million each of killed paratyphoid A and paratyphoid B bacilli; in packages of three ampules containing, respectively, the same dosages as the three-syringe package (with a syringe); in packages of 30 ampules, hospital size; and in vials of 5 c.c., 10 c.c. and 20 c.c., each cubic centimeter containing 2,500 million killed bacilli. E. R. Squibb and Sons, New York.

Staphylo-Acne Vaccine.—A mixed bacterial vaccine (*New and Nonofficial Remedies*, 1922, p. 314) that is marketed in packages of four syringes, the first containing a mixture of 50 million each of killed Staphylococcus albus, or killed Staphylococcus aureus and of killed acne bacilli, the second containing a mixture of 125 million each of killed Staphylococcus albus, of killed Staphylococcus aureus and of killed acne bacilli, the third containing a mixture of 250 million each of killed Staphylococcus albus, of killed Stayhplococcus aureus and killed acne bacilli, the fourth containing 500 million each of killed Staphylococcus albus, of killed Staphylococcus aureus and of killed acne bacilli; in packages of four ampules containing the same dosage as the four-syringe package (with a syringe); and in vials of 5 c.c., 10 c.c. and 20 c.c., each cubic centimeter containing 1,500 million killed bacteria. E. R. Squibb and Sons, New York.

Colon Vaccine.—A colon bacillus vaccine (*New and Nonofficial Remedies*, 1922, p. 299) that is marketed in packages of four syringes containing, respectively, 100, 250, 500 and 1,000 million killed bacilli; in packages of four ampules containing, respectively, 100, 250, 500 and 1,000 million killed bacilli (with a syringe); and in vials of 5 c.c., 10 c.c. and 20 c.c., each cubic centimeter containing 5,000 million killed bacilli. E. R. Squibb and Sons, New York (*Jour. A. M. A.*, Nov. 4, 1922, p. 1609).

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES:

ADAMS—James P. Dalhey, M.D., Gettysburg.
ALLEGHENY—Lester Hollander, M.D., Pittsburgh.
ARMSTRONG—Jay B. F. Wyant, M.D., Kittanning.
BEAVER—Fred B. Wilson, M.D., Beaver.
BEDFORD—N. A. Timmins, M.D., Bedford.
BERKS—Clara Shetter-Keiser, M.D., Reading.
BLAIR—James S. Taylor, M.D., Altoona.
BRADFORD—C. L. Stevens, M.D., Athens.
BUCKS—Anthony F. Myers, M.D., Blooming Glen.
BUTLER—L. Leo Doane, M.D., Butler.
CAMBRIA—Joseph J. Meyer, M.D., Johnstown.
CARBON—Jacob A. Trexler, M.D., Lehighton.
CENTER—James L. Siehert, M.D., Bellefonte.
CHESTER—Henry Pleasants, Jr., M.D., West Chester.
CLARION—Sylvester J. Lackey, M.D., Clarion.
CLEARFIELD—W. E. Reiley, M.D., Clearfield.
CLINTON—R. B. Watson, M.D., Lock Haven.
COLUMBIA—Luther B. Kline, M.D., Catawissa.
CRAWFORD—Cornelius C. Laffer, M.D., Meadville.
CUMBERLAND—Calvin R. Rickenhaugh, M.D., Carlisle.
DAUPHIN—Maude C. Exley, M.D., Harrisburg.
DELAWARE—George B. Sickel, M.D., Chester.
ELK—Samuel G. Logan, M.D., Ridgway.
ERIE—Fred E. Ross, M.D., Erie.
FAYETTE—George H. Hess, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
GREENE—Thomas B. Hill, M.D., Waynesburg.
HUNTINGDON—John M. Keichline, Jr., M.D., Petersburg.
INDIANA—James M. Torrence, M.D., Indiana.
JEFFERSON—W. A. Hill, M.D., Reynoldsville.
JUNIATA—Benjamin H. Ritter, M.D., McCoysville.
LACKAWANNA—Harry W. Albertson, M.D., Scranton.
LANCASTER—Walter D. Blankenship, M.D., Lancaster.
LAWRENCE—William A. Womer, M.D., New Castle.
LEBANON—John C. Bucher, M.D., Lebanon.
LEHIGH—Frederick R. Bausch, M.D., Allentown.
LUZERNE—C. L. Shafer, M.D., Kingston.
LYCOMING—Wesley F. Kunkle, M.D., Williamsport.
MCKEAN—Francis DeCaria, M.D., Bradford.
MERCER—M. Edith MacBride, M.D., Sharon.
MIFFLIN—F. A. Rupp, M.D., Lewistown.
MONROE—Charles S. Flagler, M.D., Stroudsburg.
MONTGOMERY—John C. Simpson, M.D., Norristown.
MONTOUR—John H. Sandel, M.D., Danville.
NORTHAMPTON—Wm. A. Finady, M.D., Bethlehem.
NORTHUMBERLAND—Charles H. Swenk, M.D., Sunbury.
PERRY—Maurice I. Stein, M.D., New Bloomfield.
PHILADELPHIA—Mary A. Hipple, Philadelphia.
POTTER—Robert B. Knight, M.D., Coudersport.
SCHUYLKILL—George O. O. Santee, M.D., Cressona.
SNYDER—Percival J. Herman, M.D., Selinsgrove.
SOMERSET—H. Clay McKinley, M.D., Meyersdale.
SULLIVAN—Carl M. Bradford, M.D., Forksville.
SUSQUEHANNA—H. D. Washburn, M.D., Susquehanna.
TIOGA—John H. Doane, M.D., Mansfield.
UNION—Oliver W. H. Glover, M.D., Laurelton.
VENANGO—John F. Davis, M.D., Oil City.
WARREN—M. V. Ball, M.D., Warren.
WASHINGTON—Charles C. Cracraft, M.D., Claysville.
WAYNE—Edward O. Bang, M.D., South Canaan.
WESTMORELAND—W. J. Walker, M.D., Greensburg.
WYOMING—Herbert L. McKown, M.D., Tunkhannock.
YORK—Gibson Smith, M.D., York.

JANUARY, 1923

COUNTY SOCIETY REPORTS

ALLEGHENY—NOVEMBER

Cancer Week was very successful in Pittsburgh. We approached the public through many different channels, a summary of which you will find in the enclosed report. The attitude of the laity was receptive, and the entire campaign met with approval.

At first we were apprehensive that cancer propaganda would start a cancer phobia, but evidently this did not occur, because, of the fifty-six patients who entered our free clinic who had no definite cancer lesion, only twelve of these patients had a fear of cancer, and of these, in only one did the phobia begin as the result of cancer propaganda.

Following is a report on the activities of Allegheny County Medical Society during National Cancer Week:

SUMMARY REPORT

A. Number of written articles and editorials (medical journals, newspapers, etc.)	70
B. Number of motion picture theatres which coöperated	7
C. Number of lectures delivered	65
1. Total number of persons reached by lectures	6,500
2. Number of audiences before which Dr. Billings' letter was read	250
D. Number of cancer clinics held	7

DETAILS OF ABOVE REPORT

A. *Written Articles*

Number of news articles	40
" " editorials in newspapers	5
" " articles in medical journals	3
" " editorials in medical journals	1
" " articles in other publications	20

B. *Motion Picture Theatre Coöperation.*

Number of theatres in which lantern slides were shown	7
Approximate number of persons reached	10,000

C. *Scientific Meetings and Public Lectures*	*No.*	*Attendance*
Professional and scientific meetings (Medical Society)	2	250
Public meetings under auspices of Medical Society	8	1,600
Meetings for nursing organizations	8	250
" " nurses in training	8	250
" " Church Clubs	4	200
" " Women's Clubs	54	3,000
" " Fraternal Orders	7	500
" " Kiwanis Club		
" " Lions' Club		
" " Chamber of Commerce		
Number of readings of Dr. Billings' letter		250
Number of radio talks given		4

Literature distributed

500 copies of an article by Dr. R. J. Behan.

D. *Number of Demonstration Clinics held*	1
Number of patients	4

Following is a report on the patients examined at the free clinic, which was held in the Department of Public Health during the week of November 13th:

Total number examined	122
Precancerous	12
Early stages	6
Advanced stages	3

R. J. BEHAN, Chairman Cancer Committee.

BERKS—NOVEMBER

At the regular meeting of the Berks County Medical Society, held on November 14th, Dr. Harry Lowenburg, of Philadelphia, addressed the Society on the subject of "Thick Cereal Formulæ as Conservators of Breast Milk." A short abstract of this paper follows:

The problem of the young breast-fed infant and its mother in relation to sufficient nourishment has been difficult of solution, notwithstanding the many methods of handling it that have been proposed. Supplemental, or substitute, bottle feeding is never entirely satisfactory, because of the danger of auto weaning as the infant becomes accustomed to the artificial nipple, the breast supply either becoming increasingly deficient or entirely disappearing.

Not all infants who are deprived of breast milk fail to receive it because of deficiency either in quantity or quality. Ofttimes maternal psychic factors are potent and insurmountable, and additional nutriment must be furnished if the maternal supply is to be maintained. In such cases, as well as in cases of actual deficiency, the use of thick cereal formulæ via the spoon succeeds in increasing the infant's weight and in maintaining and increasing the maternal milk supply. The result is that actual weaning from the breast may be postponed until the ninth or twelfth month.

Sauer, when he elaborated his method of thick cereal feeding in cases of pyloric obstruction wrought better than he knew. Not only in such cases is it valuable, but it has been proved to the writer's satisfaction that sucklings, irrespective of age, may not only partake of these thick, starchy preparations and digest them, but do so to their advantage.

Sauer's original formula was made as follows: Cereal, 6 tablespoonfuls; skim milk, 9 oz.; water, 12 oz.; Dextri Maltose, 3 tablespoonfuls. Cook one hour in a double boiler. In the feeding of infants this formula may be modified to suit the requirements of the case, and the content of protein, carbohydrates, fat, etc., can be increased at will, just as in a liquid formula. Additional skim milk may be added, or the sugar content may be increased, or quantities of boiled sweet butter or of sodium chlorid, even of partially cooked egg yolk and comminuted greens or animal foods, as chicken, beef, fish, etc., may be added.

A number of illustrative case reports are included in the paper, which is concluded in these words:

Not all infants can be taught to take thick cereal formulæ. Most of them can if their mothers will coöperate and their morale is not destroyed by nervousness. Those who will take them, promptly gain in weight and the use of bottle feeding is made unnecessary. Hence the effect of sucking on the maternal nipple tends to increase the milk which seems, by this reason and also because the mother becomes more contented, to improve in quantity and in quality. By the use of these thick cereal formulæ, weaning from the breast may be delayed many months. This method is particularly useful where menstruation has been established early in lactation. Some 25 cases have been successfully followed thus far. Some 10 other infants refused to take the cereal or the mothers refused to coöperate.

On November 17th, Dr. W. Hersey Thomas, of Philadelphia, addressed the Society upon the subject of cancer. He stressed the cardinal importance of early diagnosis and stated that the pessimistic attitude of the laity was a reflection of the lack of recognition of the local origin of the disease by some of the medical profession. The basis of our present conception was then outlined and illustrated by the history of mammary carcinoma, where it was shown that with the advances made by the radical operation, the percentage of cures has steadily increased, whereas the operative mortality has fallen as low as 1%. Our attitude should consequently be one of optimism rather than of pessimism. While cases are now seen at a much earlier period in their development, much is still to be desired in this respect, the future of the patient depending entirely upon the early recognition of the affection.

Cancer in various situations was then discussed and suspicious symptoms were taken up in detail. Great emphasis was placed upon a careful history and a thorough physical examination of the patient. Such histories and such examinations would result not only in the improvement of our cancer statistics but also in the early and accurate diagnosis of all other affections. Laboratory aids were accorded full recognition, but the point was made that they could supplement but never supplant the careful anamnesis and complete physical examination by the physician who first saw the patient. Attention was invited to the large percentage of patients with unrecognized syphilis, and many of the occasional reported cures by medical means were traced to this source of error.

It was then pointed out that if the best results were to be obtained, we should not wait for certainty but treat many cases upon suspicion. This statement was to apply in every instance in which cancer could not be excluded. The use of frozen sections at the operating table made this procedure possible and fully justified it as in the best interests of the patient. We should not be satisfied with being good doctors—we should be better doctors.

In conclusion, other methods of treatment were discussed, such as fulguration, x-ray and radium. Some cases were to be treated by surgery alone, others by some of these nonoperative methods, and still others by combinations of procedures which varied in each of the specialists. In all cases, however, the patient was lost if the malignant condition were not diagnosed in its incipiency and the onus of this early diagnosis rested upon the profession as a whole but particularly upon the general practitioner.

CLARA SHETTER-KEISER, Reporter.

BRADFORD—NOVEMBER

The Bradford County Medical Society held an open meeting in the Courthouse, Towanda, November 17th, in connection with the nation-wide observance of Cancer Week instituted by the American Society for the Control of Cancer.

Dr. Donald Guthrie, Sayre, was the first speaker and emphasized the facts that cancer is not hereditary, is not a blood disease, is not contagious and in most cases it is curable if seen in the early stage when it is simply a local disease. Repeated irritation of some locality is the most frequent cause of cancer, as for instance when the tongue comes in frequent contact with a ragged tooth or the clothing irritates a warty mole.

Dr. S. D. Conklin, Sayre, explained a set of slides illustrating various types of cancer and showing the advantage of early treatment. He also spoke of the tragedy of depending on advertising quack cancer doctors.

Dr. J. M. Higgins, Sayre; Edward U. Reed, U. S. N., and C. Manville Pratt and President H. C. Down, Towanda, emphasized certain phases of the recognition and treatment of cancer.

At a business meeting held at the close of the public meeting the by-laws were changed so as to make the annual dues of the society $8.00 instead of $7.00; a committee was appointed to consider the proposition made by the University of Pennsylvania for university extension work in connection with postgraduate medical education; and the work of Dr. Louise Grover, Dental Hygienist, employed by the Bradford County Tuberculosis Association, was endorsed.

Under the auspices of the county medical society, Dr. C. Manville Pratt, Towanda, talked for thirty minutes before the Athens Rotary Club, November 8th; Dr. Donald Guthrie, Sayre, talked before the Sayre Rotary Club, ladies' night, for thirty-five minutes, on November 13th, and before the Towanda Rotary Club, ladies' night, for a half hour, on November 14th; and on November 21st, Dr. Guthrie spoke before an audience of two hundred in the Presbyterian Church, Canton. He was followed by Dr. Carlyle N. Haines, Sayre, who exhibited and explained the cancer slides shown before the county society on the seventeenth. The papers of the county were generous in the space given to the various meetings and to extracts from cancer literature. Cancer literature was quite generally distributed throughout the county. C. L. Stevens, Reporter.

CARBON—NOVEMBER

An open meeting was held in the County Courthouse during Cancer Week, under the auspices of the Carbon County Medical Society. This unfortunately, owing to inclement weather, was not very well attended. Those present, however, were much interested and responded when invited to ask questions.

Two-thirds of the members of the Society were present and many of them helped to make plain certain facts about cancer. Dr. Edmund B. Piper, of Philadelphia, addressed the meeting, introduced by the president of the Society, Dr. J. J. Bellas, of Lansford.

The daily and weekly papers of the county coöperated, in publishing the invitation to the public to attend the meeting.

In addition to this meeting, talks were made to some of the teachers and in the high schools of the county.

Jacob A. Trexler, Secretary.

CHESTER—NOVEMBER

The regular monthly meeting of the Chester County Medical Society was held at the Tredyffrin Golf and Country Club, Paoli, on Tuesday, November 21st, with President W. W. Betts in the chair.

The meeting was preceded by a substantial luncheon provided by the Paoli members, following which the Society was addressed by Dr. Edward Kerr, of Downingtown, and Dr. J. L. Klauder, of Philadelphia.

Dr. Kerr gave a most interesting and comprehensive review of the study of cancer from the time of Galen down to the present time. The case report from an ancient book of medicine by Bell was most impressive and was used to illustrate the advances which have been made in treatment of the disease since that time.

Dr. Kerr emphasized the great importance of early diagnosis and prompt radical treatment of all cases which are even suspected of being cancer. He cited several instances where patients owed their lives to this plan of action. It is undoubtedly true that there are cases of undoubted cancer which undergo spontaneous cure, but these cases are so rare that they do not deserve consideration by thoughtful men. The success of the quacks and charlatans is largely due to their practice of calling every new growth "cancer," and treating it as such. Incidentally there is something to recommend this line of thought and action.

The diagnosis of cancer is as difficult as ever. Even the microscope often fails to show some malignant area in an excised piece of tissue, and the reassuring report of the laboratory lulls the patient into a sense of false security until irreparable damage has been done.

In regard to the etiology of cancer it is very interesting to note that the pendulum of medical theory has swung fairly well back to the original theory of Galen that the disease was caused by badly disorganized "humours" of the body. The high cholesterol content of the blood of cancer patients is thought to be of distinct diagnostic significance. Whether or not science is actually on the right track in regard to the etiology of cancer remains yet to be determined.

In conclusion, Dr. Kerr urged the coöperation of the members of the Society in spreading information among their patients, and the laity in general regarding the value of early diagnosis and treatment of cancer.

The Society was then addressed by Dr. Joseph Klauder, who gave a very instructive talk on the treatment of syphilis by injections of bismuth. While this form of treatment has not been tried sufficiently long to be advocated as a routine treatment, it nevertheless seems to possess certain advantages over either arsphenamin or mercury in special cases, particularly those in which the tolerance toward the arsenical preparations is low. It is given intramuscularly, usually suspended in oil, and is comparatively painless. The chief toxic symptoms following overdosage are foul breath and blue line on the gums. At times an ulcerative stomatitis may result. The bismuth treatment has been highly successful in bringing about a negative Wassermann reaction in a very short time.

Henry Pleasants, Jr., Reporter.

CLINTON—NOVEMBER

The Clinton County Medical Society observed Cancer Week with a number of meetings, and it is believed that the subject was presented to the public in such a way that the people were not frightened about it, and that our efforts along this line will do some good.

The campaign was opened at the Rotary Club meeting on Tuesday noon. All the doctors of Clinton County were invited to be present as guests of the Club. The objects of the week's activities were outlined and the subject of cancer discussed. Tuesday afternoon the subject was presented to the Civic Club of Lock Haven. There were approximately 100 people at these two meetings.

The Clinton County Teachers' Institute was addressed upon the subject on Wednesday afternoon. There were about 400 teachers and their friends present at this meeting.

During the week short talks were made to two different secret societies, at which meetings about 250 men were present.

A public meeting was held in the local high school auditorium on Friday night, at which lectures were delivered by Drs. S. J. McGhee and John B. Critchfield, of Lock Haven, before 255 people.

The newspapers gave freely of their space, publishing eight different articles. The picture houses coöperated freely, showing appropriate slides. The pulpit coöperated in making announcements and reading Dr. Billings' letter at their services, and the public seemed to be greatly interested in the subject wherever it was presented.

David W. Thomas, Chairman Cancer Committee.

DAUPHIN—NOVEMBER-DECEMBER

On the afternoon of November the 14th, the Dauphin County Medical Society, which was well represented, met at the State Hospital for the Insane, Harrisburg, as the guests of Dr. E. M. Green, the Superintendent, who gave a very interesting paper on "The Newer Classification of Mental Diseases," illustrated with many clinical cases.

After the meeting Mrs. Green entertained the members of the Society and had luncheon served to them.

On Tuesday, December the 12th, the Society held its meeting at the Academy of Medicine, Harrisburg, with Dr. H. F. Gross, the president, in the chair.

After the usual business procedure, Dr. David Riesman, of Philadelphia, Clinical Professor of Therapeutics at the University of Pennsylvania, gave a masterly paper on "Angina Pectoris." Following the meeting, which was unusually well attended, the members and guests enjoyed a light repast and social hour.

The following report of the activities of Cancer Week has been compiled by Dr. G. L. Laverty, Chairman of the Cancer Committee:

The results of Cancer Week in Dauphin County approximate as follows: Meetings before business men's clubs, 3; total attendance, 300; educational articles in the public press, 20; minimum number reading these articles, 100,000; "dry clinic" at Harrisburg Hospital, addressed by Dr. W. Wayne Babcock, 60 patients; "dry clinic" at Polyclinic Hospital, addressed by Dr. Damon B. Pfeiffer, 40 patients.

Several physicians report patients consulting them privately as a result of the knowledge received through the educational campaign. These patients had early malignant growths which they were neglecting on account of ignorance.

Several physicians report the subject being discussed by laymen and inquiries being made in clubs and at their offices, asking for additional information and expressing appreciation of the knowledge received through the articles in the public press.

These articles were written by the heads of the public health organizations of the community, the president of the County Medical Society and members of the committee.

The campaign was conducted under the direction of and in the name of the American Society for the Control of Cancer. MAUD C. EXLEY, Reporter.

ELK—OCTOBER-DECEMBER

The September meeting was a very decided "frost," as there was not a quorum present.

The October meeting was held at Ridgway, Dr. B. A. Beale, of Dubois, reading a paper on "Acute Suppurative Otitis Media, With Particular Attention to Mastoid Involvement." Dr. Beale particularly emphasized the importance of careful x-ray examination, saying that the x-ray is the best and only way of determining the type of cell with which we have to deal, and this information proves very helpful in deciding whether or not to operate. Dr. Schumacher, of Dubois, opened the discussion by invitation and illustrated his discussion by fine slides of a set of mastoids.

The December meeting was also held in Ridgway. At this meeting Dr. John D. Donnelly, of the Division of Child Health, State Department of Health, explained the intention, scope and function of the "Well Baby Center." The Society endorsed the efforts of the Department and expressed a willingness to coöperate.

In January the annual meeting and election of officers will be held. SAMUEL G. LOGAN, Reporter.

LEBANON—NOVEMBER

The chief event in Lebanon County's observance of Cancer Week was, of course, the public lecture in the High School building, on Thursday, November 16th. In order to insure a good attendance, the pastor of each church and the head of each social organization, and those in charge of the Parent-Teacher and Child Welfare Organizations were interviewed and their aid enlisted. So that, when Dr. Basil Beltran came up from Philadelphia, he found an interested audience of about four hundred. Dr. Beltran is a forceful speaker and has that happy faculty of translating medical language into words that the laity can understand and appreciate. His lecture was a decided success and did a great deal of good.

Each person attending the lecture received copies of the literature which was sent us and the remaining copies were distributed through the industries.

The writer believes that the cancer message "got across" to a large number of our people and will be productive of excellent results.

W. H. MEANS, Secretary.

LEHIGH—NOVEMBER

At a well attended meeting of the members of the Lehigh County Medical Society on November 13th, it was arranged to hold a public meeting in the High School Auditorium, Allentown, on Friday, November 17th, in observance of Cancer Week. Dr. William H. Cameron, of Pittsburgh, was acquired to deliver an illustrated lecture on "Cancer." This week being "National Cancer Week," the meeting was arranged as part of the Society's program to acquaint the general public with the facts concerning the diseases and methods adopted to combat its deadly effects. Invitations were extended to the staff and nurses at the State Homeopathic, Allentown, and Sacred Heart Hospitals of Allentown, as well as hospitals in the neighboring counties.

Before an audience of 500 persons at the public meeting, Dr. Cameron drove home the fact that cancer, the most dreaded of all dread diseases, is doomed. The keynote of his address, without a doubt, was coöperation—cöoperation from the public, and he stated that perhaps the medical profession was at fault in not coming before the public with its problems long ago. Dr. Cameron urged upon his audience the importance of early action on the part of the patient to secure a competent physician to administer treatment. His slogan was: "He who hesitates is lost."

J. TREICHLER BUTZ, Secretary.

LUZERNE—NOVEMBER

The activities of the Luzerne County Medical Society for the month of November were concentrated on the nation-wide cancer campaign. A public meeting was held in the High School Auditorium at Hazleton on the evening of November 15th in observance of Cancer Week, and a record-breaking crowd turned out to hear Dr. J. M. Wainwright, of the Moses Taylor Hospital, Scranton, and Dr. Emory G. Alexander, of the Episcopal Kensington Hospital for Women and the Women's Medical College of Philadelphia.

Nearly forty physicians were on the stage, and over 270 school teachers and principals, also a large number of trained nurses, were in attendance. Dr. Wainwright said that he had been from Maine to North Carolina, but that it was the largest crowd he had ever addressed before.

Some of the points brought out by Drs. Wainwright and Alexander were that cancer is not hereditary, that it is increasing while other diseases are on the decrease, and that cancer of the lip is one of the most frequent forms of cancer. The "fake doctors" were also severely flayed. Walter Lathrop,
Chairman of the Cancer Committee.

MIFFLIN—DECEMBER

The December meeting of the Mifflin County Medical Society was held at Lewistown, in the parlors of the Coleman House, Thursday, December 7th, at 11 a. m. There was a large attendance of members, with Dr. W. H. Kohler, of Milroy, presiding.

A petition was circulated among the members of the local society for the endorsement of Dr. George A. Knowles, Philadelphia, Chairman of the Committee on Public Health Legislation of the State Society, for the position of State Commissioner of Public Health, to succeed Col. Edward Martin, the present commissioner. The petition asked Governor-Elect Pinchot to appoint Dr. Knowles to that position. The petition received the signature of all the members present.

Dr. Rupp, Chairman of the Program Committee, read the new program for the coming year. The program was accepted and the committee was thanked by the society for the interesting program for the year 1923, which in addition to the members themselves will include such well known personages as Dr. Mary Riggs Noble, of the State Health Department, who in February will read a paper on "Infant and Maternal Welfare Work"; Dr. H. L. Foss, of the Geisinger Hospital, Danville, who will discuss "Goiter"; and Attorney L. J. Durbin, District Attorney of Mifflin County, who in April will read a paper on "Medical Testimony." The new program will have these and other good things for the coming year.

At this December meeting was held the annual election of officers with the following results: President, Dr. C. M. Johnson; first vice-president, Dr. H. S. Alexander; second vice-president, Dr. O. M. Weaver; secretary-treasurer-librarian, Dr. J. A. C. Clarkson; reporter, Dr. F. A. Rupp; censors, Drs. Wilson, Rupp and Barnett.

Dr. S. W. Swigart, Lewistown, read the paper, his subject being, "Syphilis, Symptomatology and Treatment." Dr. Swigart treated this old subject in a new and interesting way, discussing in detail the history of syphilis in the human economy from the "snuffles" of the newborn to the paresis and locomotor ataxia of the old and decrepit syphilitics. He advocated strongly that the newer arsenicals be combined with mercurials, and that both be given fearlessly, but carefully. F. A. Rupp, Reporter.

MONTGOMERY—NOVEMBER

The regular meeting of the Montgomery County Medical Society was held at Montgomery Hospital, Norristown, on November 8, 1922. The following members were present: Drs. McLaughlin, Heffner, Elmer, Irwin, Sherborn, P. J. Lukens, Hunsberger, Wolfe, McKenzie, R. Knipe, MacDonald, Shearer, Watson, Wright, Beideman, McCracken, Kriebel, Little, G. W. Miller, Dill, Brush, Parker, Bostock, Atkinson, W. G. Miller, Eisenberg, Vedder, Moore, Garner, Simpson, Hurwitz, Perkins, and Buyers.

Dr. James, E. Hunt of Norristown, Pa., presented a transfer from the Lycoming County Society, which was accepted.

Dr. J. R. V. Wolfe, Chairman of the Cancer Committee, earnestly implored a full attendance at the open meeting on Cancer, November 16th.

Dr. A. C. Morgan, of Philadelphia, gave an excellent discourse on "Applied Therapeutics." This was discussed by Drs. Elmer, McKenzie, R. Knipe, Hunsberger, Dill, Eisenberg, MacDonald, and Buyers.

CANCER WEEK

The week of November 12th to 19th, known as Cancer Week and celebrated as such throughout the United States, has come and gone. The Montgomery County Medical Society can feel assured that its part in the public propaganda against the inroads of cancer was successfully carried out.

Through the kindness and coöperation of Mr. Joseph D'Andrade, of the Metropolitan Life Insurance Company, 3,500 announcements were placed in as many homes in Norristown and surrounding districts. One hundred placards were posted in Norristown and other towns throughout the county. Hundreds of copies of literature were also distributed. This preparation culminated in a public meeting held at the Norristown High School Auditorium on Thursday evening, November 16th. This meeting was a decided success, as there was a good crowd, good music and good speakers.

The Montgomery County Medical Society came nearer to making itself felt as an influence for good among the laity than ever before in its history. It was the consensus of opinion that repetitions of such occasions could not fail to bring the laity and the medical profession into closer sympathy with each other.

An idea can probably best be gained as to how the Cancer Program accomplished its purpose by quoting the comments of the daily papers, both of which had representatives present.

"Dr. J. R. V. Wolfe presided and in his opening remarks said that the week was being observed to sound a warning against cancer, which is now causing the death of one out of ten persons over forty years of age. He emphasized the importance of its early detection and the hopeful aspect that it can be cured if taken in time. 'The problem to be solved,' he declared, 'is that cancer must be combated, if possible, and it is through educational methods that we can present the problem.'

"The meeting was opened with a number of well-rendered baritone solos by Benjamin F. Evans, accompanied on the piano by John Duddy.

"Dr. Elizabeth L. Peck, of the Women's Medical College of Philadelphia, was next introduced. Dr. Peck's talk on the 'Surgical Prevention and Treatment of Cancer' gave her hearers a clear insight into the beginning, the development and the results of the dreaded disease. 'Prevention of disease is the highest work of a physician,' she said. As an illustration of preventive measures, she declared that if it were not for vaccination, fifty per cent of living children to-day would be in the graveyard.

"In explaining the formation of cancer, Dr. Peck stressed the facts that it is not hereditary and not in the blood or contagious, but is just a mass of cells 'gone wrong in their growth.' Constant irritation of the tissues is what causes the beginning of cancer and if taken in time by competent surgical treatment or radium or x-ray methods it may be entirely removed.

"Dr. Wolfe then introduced Dr. William L. Clark, of Jefferson Medical College. Dr. Clark spoke on 'Treatment of Cancer by Combined Methods.' He illustrated his talk with lantern slides and motion pictures, showing the wonderful cures which have been made and lives prolonged by means of the combined use of surgery, x-ray, dessication, electrocoagulation and radium.

"In closing, the thanks of the assemblage was voted to the Montgomery County Medical Society for the imparting of so much instructive information."

The committee in charge of the arrangements for Montgomery County Cancer Week was Dr. J. R. V. Wolfe, chairman; Dr. Philip Lukens and Dr. John D. Perkins. JOHN C. SIMPSON, Reporter.

MONTOUR—OCTOBER-NOVEMBER

The regular monthly meeting of the Montour County Medical Society was held at the Geisinger Memorial Hospital, Danville, on Friday evening, October 20, 1922, and was called to order by the president, Dr. H. V. Pike, at 8:15 o'clock. The following were present: members—Drs. E. H. Adams, B. E. Bitler, C. E. Ervin, J. Allen Jackson, R. A. Keilty, Reid Nebinger, P. C. Newbaker, H. V. Pike, J. H. Sandel, E. B. Shellenberger and Cameron Shultz; visitors—Drs. A. R. Kirch, J. E. Book and R. W. Otterbein, Mr. Robert Froberger, and the Misses Fletcher, Parker and Mary B. Scott, nurses.

At the suggestion of the American Society for the Control of Cancer, it was decided to observe Cancer Day, either in connection with the November meeting of the Society, or as a public meeting soon thereafter.

The Committee on Public Policy and Legislation, reporting on Chiropractors, stated that they had made not a little effort, but found it difficult to secure anyone who was willing to testify against them; the Committee were commended for their diligence and directed to continue their efforts.

The secretary presented a report on the Secretaries' Conference, held in connection with the late meeting of the State Medical Society. He reported that it was the first conference that he had attended, that he had enjoyed it, found it interesting and that it gave opportunity to become acquainted. The speakers who appeared before the conference urged the secretaries to encourage the early payment of dues, and thus keep up, if possible, a 100% membership; to keep before the minds of the members the need of early diagnosis and treatment in cancer, the message to be one of hope and not of despair; to encourage the holding of at least one public health meeting each year, and thus help to mold public opinion in health matters.

Dr. J. Allen Jackson, Delegate to the House of Delegates, of the State Society, reported that he had attended all the meetings and enjoyed the work; that the principal business transacted was the revision of the constitution and by-laws. He said the changes made were largely an improvement in phraseology, to secure better statement and clearer meaning. He reported a change in the Councilor District to which Montour County belongs, which now includes Bradford, Sullivan and Susquehanna Counties, with Dr. Donald Guthrie, of Sayre, as Councilor. Dr. Jackson said he considered it an honor to serve the society, as its delegate, and he was tendered a vote of thanks for his faithfulness and his report.

Dr. Cameron Shultz, Medical Inspector of Schools for Montour County, made a report in regard to the condition of the teeth of children, with special reference to the recent dental inspection of children of the lower grades in our schools, made by the Dental Division of the State Department of Health. This inspection brought out some surprising conditions. Of 41 children examined, all, or 100%, were found to have carious teeth, with an average of 9.7 cavities per mouth. The teeth of a number of children were reported as dirty, and other defects were noted. Various ways and means were discussed for caring for the teeth of these children. The employment by the school authorities of a dental hygienist appeared to be the most practical, and it was decided to strive to work out the problem along that line.

The scientific program consisted of a splendid talk by Dr. R. A. Keilty, pathologist to the Geisinger Hospital, on "The Pathology of Thyroid Disease." He presented this broad subject in his usual clear, lucid manner, and illustrated it by a series of specimens, charts and drawings. He pointed out that thyroid disease is not a disease of itself, any more than is kidney or heart disease, but rather the result of a general diseased condition. He preferred to speak of these cases as thyroid disease, rather than goiter. He said there are two general types, the toxic and the nontoxic. Clinically, he mentioned four types or groups: *first,* the simple enlargement or hypertrophy; *second,* the specific type; *third,* a true hyperplasia, and *fourth,* the inflammatory type. The adolescent type belongs to the first group; the exophthalmic to the second group; the colloid variety to the third group, and the inflammatory to the fourth group. Then there are the cancer types, which are much the same as cancer found elsewhere. He declared that many thyroid conditions are a response to infections; that bacteria from the teeth and tonsils are responsible for many inflammatory cases. He threw out a caution against the removal of the gland before 21 years of age; first be sure there is present a specific cause for its removal. The whole subject was illustrated by numerous stereoscopic views.

Dr. E. H. Adams, in opening the discussion, said that there was much difference between the clinical manifestations of thyroid disease and its pathological findings, and that the pathologists would be likely to have difficulty in maintaining their position. He said that many cases give a history of goiter since childhood. They remain stationary for years and then something occurs and they become active. They usually start in much the same way in all varieties except the exophthalmic.

Dr. C. E. Ervin said that he had given much thought to thyroid disease and would continue to do so. He thinks we should consider the patient's metabolic rate and feels it would give valuable indications for treatment. He praised Marine's work, yet feels that some features of it need qualification; that all cases cannot be worked out along the lines he suggested. However this may be, we must clean up the teeth and the tonsils, and thus get rid of points of infection, before we touch the goiter.

Nothing further appearing, the society adjourned.

PUBLIC CANCER MEETING

Under the auspices of the Montour County Medical Society, a public cancer meeting was held at the Luna Theatre, Danville, November 23d, at 4:15 p.m. There was a good attendance, much interest was shown and a good meeting was held.

Dr. H. L. Foss, Surgeon in Chief of the Geisinger Hospital, Danville, opened with a brief presentation of some of the salient facts regarding cancer. He stressed the need of early treatment and gave it as the only hope, saying that the treatment is surgical and only surgical. He deplored the fact that there are still too many physicians to be found who temporize with the early manifestation of cancer, who regard painless lumps lightly, treat ulcers of the lip with ointments, caustics, etc., and thus allow such cases to drift into a hopeless condition. He emphasized the fact that early cancer cases are not incurable; that cancer is not contagious, is not hereditary, is not a disgrace and should never be treated by ointments, plasters, caustics, by so-called cancer specialists, and the like, but by the skillful surgeon. Too often the cause of delay lies with the patient, himself, or his friends. He fears operation; waits to consult the wishes of friends, to try out some much advertised cure, or consult some much-lauded cancer specialist. Thus cases come to the surgeon too late.

Since the Geisinger Hospital was opened seven years ago, 600 cancer cases have been admitted. Fully 90% of these came late, too late for their good. Dr. Foss showed how tuberculosis had been reduced by education during the past three or four years, and hoped for the same good results from public education in regard to cancer.

Moving picture films, prepared by the Rockefeller Institute, were next shown, which emphasized the important points already enumerated.

Dr. R. A. Keilty closed by giving some points on the pathology of early cancer. He said that cancer cells are not new cells or formations, but cells misplaced. In time these grow, multiply, then spread by being carried through the lymph channels. The hope for cure, therefore, is early, before any migration takes place; not late. The purpose of our efforts is to save life. He summed up with a plea to avoid delay, to shun the ill advice of neighbors and friends and all irregular healers, and to rely on the doctor only.

J. H. Sandel, Reporter.

NORTHUMBERLAND—NOVEMBER

Under the auspices of Northumberland County Medical Society, Cancer Week, November 12th-18th, was very fittingly observed throughout the county. The different newspapers very graciously printed article after article, and through that medium alone thousands of people were reached which would have been impossible to reach in any other way. To use Dr. Bloodgood's own words, "The public press can do more for the control of cancer, by the publication of scientific articles, than we as a profession can ever hope to accomplish."

The churches throughout the county announced from the pulpit the object of Cancer Week and in a great many instances Dr. Billings' address was read.

Monday evening, November 13th, Dr. J. Stewart Rodman, of Philadelphia, addressed a large public meeting in the High School Auditorium at Sunbury, illustrating his talk with lantern slides. On Tuesday evening Dr. Robert E. Keilty, of the Geisinger Memorial Hospital, Danville, addressed a large audience in the High School Auditorium at Shamokin. Wednesday evening, Dr. J. Ralston Wells, of Philadelphia, addressed a large audience in the High School Auditorium at Mount Carmel, and on Thursday evening Dr. E. J. Klopp, of Philadelphia, addressed a large audience in the High School Auditorium at Milton. All of these meetings were for the public and were very well attended, and all seemed to be interested in the subject. Literature and booklets on cancer were passed out to the audience and at all of the meetings lantern slides were used to illustrate and bring home to the people the seriousness of delays and procrastination in this disease which is becoming such a menace to mankind.

Our Cancer Committee were on the job, and to them belongs the credit of pulling off four of the largest and best public meetings under the auspices of organized medicine in the history of the county.

Charles H. Swenk, Secretary.

PHILADELPHIA

November 22

Dr. J. Norman Henry, president, in the chair.

The Cancer Problem and the General Practitioner: Dr. Robert B. Greenough, Director Huntington Memorial Hospital for Cancer Research, Harvard University. The accomplishments in the treatment of cancer, said Dr. Greenough, have been meager. Before the days of radium Dr. Gibson, of New York, estimated that only 16% of the cancer cases which came to him were early enough to justify operation with the expectation of cure; but at this time St. Luke's Hospital, New York, has given out figures amounting to 20% possible cures after operation. Dr. Greenough stated that the seat of the cancer and its extension had much to do with the percentage of cures, since it is known that cancers of the lip and breast are better operative risks than are those of the uterus and stomach. It has been estimated that 90 to 100 per cent of cancers of the lip with no glandular involvement of the neck are five-year cures, and that 70% of breast cancers do not recur after 5 years if there has been no axillary extension; while cancers of the uterus and stomach have far less generous margins. With the introduction of radium and x-ray the field of operability has been greatly increased and they are taking their places more and more as an aid to the surgeon rather than as a rival.

But even with our advanced methods there are large numbers who die annually from cancer. The great reason is the lack of public education. To hope for a cure, Dr. Greenough said, the patient should come to a doctor within 6 weeks after he has noticed the first symptom, but it has been shown that the average time is 6 months. Three months are lost while the doctor is making up his mind about the case, and two weeks elapse before the patient accepts the advice for operation. How are we to decrease this delay 1. By instructing the public through such means as Cancer Week, pamphlets, posters, etc., giving them some idea of the seriousness of cancer and erasing from their minds the idea that pain is one of the first symptoms. It is the physician's duty to add his personal instruction and assurance to that already given them. 2. By providing the physician with safe and practical methods of examination. He should at all times consider the possibility of a cancer if the patient is of cancer age and if the lesion is in that part of the body where cancer frequently occurs. He should examine the patient first by inspection, by digital means, and then, if necessary, he should do an exploratory operation and remove a portion of the tumor for examination. Dr. Greenough stated at this point that while it is considered very bad surgery to incise a cancer when it can be avoided, because of the danger of metastasis, yet it may be a very wise practice to remove the tumor, get an immediate report as to its malignancy, and if cancer is found, to do a complete operation at this time.

Practical Applications of Experimental Cancer Research: Dr. Francis Carter Wood said that the theory as to the cause of cancer which prevailed at the time of his entrance into research work has become incompatible with our present knowledge. It is now known that a cancer is a living creature growing inside the body, and for that reason much more should be known about life itself. Our knowledge of mammalian life is scanty. We know the chemical residues of the cell after death but have no information as to the life of the cancer cell. When the tumor cell and the normal cell are compared under similar conditions it is found that they do not vary a great deal, although a tissue culture of the tumor does not grow so readily as does the normal. It has been found that the cancer cell stands between the kidney and liver cell in its consumption of oxygen; that its hydrogen ion concentration is that of the structure from which it comes; that injection into an animal produces no blood reaction. A cancer grows in an unexplained way in an unexplained place. Liver tissue growing in the brain is the same as that growing in the liver itself, etc. For that reason it has been hard to make an anticancer serum which would act on the abnormal cell and at the same time injure in no way the normal.

That cancer can be produced has been shown by Dr. Wood and his associates, when by constant irritation they caused the formation of sarcoma of the liver in a series of 750 rats. But irritation may not always cause a tumor. By the introduction of a bristle into the stomach wall of the mouse an adenocarcinoma was produced which could be positively diagnosed from a morphological standpoint, but biologically could not be called a true cancer, since the removal of the bristle brought about a spontaneous cure. It has been found however that irritation prolonged over a year's time did bring into existence a definite cancer.

One of the factors which Dr. Wood has been studying has been the influence of massage on the tumor. By manipulating the tumor for one-half minute daily for two or three days he discovered that there was a marked increase in metastasis, due to a breaking down of the delicate walls of the structure with subsequent hemorrhage.

One of the problems of the Research Department at Columbia has been determining the factors which underlie the use of radium and the x-ray. Dr. Wood states that there is no definite dosage, the amount depending upon the susceptibility of the tumor cells (some being more sensitive than others) and the number of hours during which it is applied. The results of the x-ray are: a rapid shrinkage, a thrombosis in the blood vessels, and a destruction of the cells; of radium: a destruction of the cells and a thickening of the vessel walls. The cells of the periphery are the most difficult to kill when the vessels are large.

Objectives of Radio Therapy in Cancer: Dr. Harvey R. Gaylord stated that the objectives are concerned with a knowledge of radiation and the biological processes. Advance in the former has meant the coöperation and help of the physicist with the result that it has become possible to measure the radiation comparable to the biological results desired. The erythema dose is determined by the standard factors of redness to the skin and slight blister formation, and is ascertained only by trial. Such factors as the character, the quality and quantity, and the penetrating power of the rays are those which concern the roentgenologist. In comparing x-ray and radium it has been found that in measuring the radiation not such great difference has been found, that we now have an x-ray which in quality and quantity closely approximates radium; but while radium may be applied directly to the part, x-ray can reach to greater depth. It is interesting to note that some cancers are not amenable to radium treatment. In this connection Dr. Gaylord stated that cancer is not a disease about which one may generalize, because it is not one process to which one definite cause can be assigned but a number of different conditions. He feels that there is evidence in favor of a theory of resistance which increases with the advance of the disease, shown in one way by the tendency to recover, even when all the cancer tissue is not removed by the surgeon. Dr. Gaylord had some very interesting slides illustrating the radium pack.

Discussion: Dr. John H. Gibbon wished that we might draw some practical value out of the papers given. A cancer should always be examined carefully. No operation should be done on an inoperable cancer and especially is an operation contraindicated in the presence of metastasis. Dr. Gibbon stated that the public should be taught that every tumor does not necessarily mean an extensive operation but that much depends upon the malignancy of the tumor mass.

Dr. Charles C. Norris stated that in gynecology cancer of the cervix and fundus of the uterus are most frequently found. In diagnosing his cases he finds that cancer of the cervix are very easily determined by digital examination and by inspection, but that a diagnostic curettage is necessary for deciding that a cancer of the fundus is present. Treatment of the cervix or the uterus with radium is of distinct advantage in checking the hemorrhage and discharge. X-ray has little place in gynecology. Dr. Norris thinks that the limit has been reached in treating these cases with surgery but that much can be done when the surgeon, the roentgenologist and the pathologist work together.

Dr. Henry K. Pancoast's one plea was for early diagnosis. At this time the radium and x-ray stations have become a dumping ground for the inoperable cancers and the value of treating cancer in its incipiency is realized more than ever. Dr. Pancoast said that upon the doctor rested the responsibility for the early recognition of malignancy and that he must be on the lookout for such conditions at all times. The man with bad teeth, presenting a mouth lesion, the syphilitic, the one who comes with a leukoplakia in his mouth or a keratosis on his face should always make one think of and suspect cancer.

Clara R. King, Reporter.

WARREN—NOVEMBER

Twenty-three members of the Warren County Medical Society sat down to dinner in the Elks' dining room as guests of Dr. E. J. Cowden, Monday evening, November 20th.

The meeting which preceded the supper was given over to reminiscences of practice in Warren County forty years ago.

Dr. Cowden spoke of the drugs then in use, many of them never employed to-day. Dr. Pryor, of Sheffield, gave a very amusing account of his first experiences in and about Cherry Grove, where the famous oil gusher "646" was found. Cherry Grove had at that time 5,000 inhabitants and its roads were as "wild and woolly" as the West we used to read about.

Dr. Richard Stewart told about some of his first cases and the difficulties in reaching them, also how astonished he was to see the telephone for the first time.

Dr. Baker, who has been in continuous practice over forty-four years, related how he was instrumental in getting the first telephone strung in Warren and it was between the offices of several doctors, and also to North Warren.

Dr. Hamilton, another veteran, told of some of the interesting and strange cases that occurred in the early eighties, also of the first application of antiseptic surgery.

The meeting was fully enjoyed by all present. It brought out forcibly the fact that the young doctor of to-day can consider himself lucky that he enjoys the advantages of automobile, telephone, hospitals and laboratories, expert consultants, and all that modern medicine means and that he comes to his work well prepared by a good education in a well equipped medical college and hospital.

The old doctor lacked much of this, but he used his common sense and in the school of experience learned lessons that made his work valuable and useful.

Michael V. Ball, Reporter.

STATE NEWS ITEMS

DEATHS

Dr. Maurice Goldberg, of Philadelphia, died on November 29, 1922. He was born in 1876, and was graduated from Jefferson Medical College of Philadelphia in 1904.

Dr. Eugene A. Moore, of Philadelphia, died on November 27th. Dr. Moore was born in 1883 and was graduated from Jefferson Medical College of Philadelphia in the class of 1908.

Dr. T. C. Horn, of Lehighton, passed away on November 21, 1922. Dr. Horn was born in 1848 and was a graduate of the College of Physicians and Surgeons, Baltimore, Md., class of 1878.

Dr. Irvin F. Huff, of Sellersville, aged 62 years, died on November 21st from heart disease. He was graduated from the University of Vermont College of Medicine in 1885.

Dr. Homer E. Griswold, of Erie, aged 43 years, was found dead in bed on the morning of December 14th. He had been in apparent good health until recently. Dr. Griswold was graduated from Cleveland-Pulte Medical College, Cleveland, Ohio, in 1903.

Dr. John B. Laidley, of Carmichaels, died December 15th, at the age of 92 years. Dr. Laidley was graduated from the Medical Department of the Western Reserve University in the class of 1856. He was surgeon of the Eighty-Fifth Regiment, Pennsylvania Volunteers, in the Civil War.

Dr. Samuel R. W. McCune, of New Castle, a former resident of Pittsburgh, died December 9th at the home of his mother in Wilkinsburg. Dr. McCune was born in 1875 and was graduated from Jefferson Medical College of Philadelphia in 1906. During the World War he served with the Medical Corps at Camp Taylor, Louisville, Ky., and while there was made a captain.

Dr. Alva H. Caven, of Youngwood, was killed December 1, 1922, when his automobile was struck by a train of the Southwest Branch of the Pennsylvania Railroad, at County Home Junction, three miles south of Greensburg. Dr. Caven was a graduate of the Medical Department of the University of Western Pennsylvania, class of 1901. He leaves his widow and a brother, Dr. W. A. Caven, of Pittsburgh.

Dr. Addison E. Cattron, one of Mercer County's best known physicians, died at his home in Sharpsville on December 6th, following a brief illness from pneumonia. He was born in LaPort, Indiana, 60 years ago, the son of Dr. and Mrs. Samuel Cattron. He graduated from Cleveland Medical College, Cleveland, Ohio, in 1894, and came to Sharpsville, where he built up a large practice. He is survived by his wife, three daughters and one son.

Dr. H. L. Mershon, aged 72 years, died November 27th, at the home of his brother, Dr. E. B. Mershon, at Saxonburg, Butler County, where he has resided the past two years. He was born in Youngstown, and after graduating from Bellevue Medical School, New York City, practiced many years in Pittsburgh and Saxonburg. He retired several years ago from practice. He is survived by his brother and a nephew, his wife having died twenty years ago.

Dr. Albert Ralston Matheny, of Pittsburgh, died at the Pittsburgh Hospital on December 10th. Dr. Matheny was born in Freedom in 1874, and was graduated from Jefferson Medical College of Philadelphia in 1898. For several years he was a member of the staff of the Presbyterian Hospital, Pittsburgh, later resigning to become a member of the staff of the Pittsburgh Hospital, of which he was surgeon at the time of his death. During the World War he was a captain in the medical corps and was stationed at Camp Oglethorpe, Ga., Camp Lakewood, N. J., and Camp Grant, Ill. Dr. Matheny was a member of the American Medical Association, the American College of Surgeons, the American Association of Industrial Physicians and Surgeons and many fraternal organizations. He leaves his widow, three sons, a sister and two brothers.

Dr. Sidney K. Fenollosa, aged 49, head of the medical staff of the Pittsburgh Hospital, died December 11th at his home in Pittsburgh. He was born in Salem, Mass., and attended the public schools there. He was later graduated from Harvard College and the Medical School of the University of Pennsylvania. In 1904 he located in Pittsburgh and became a practicing physician.

During the late war Dr. Fenollosa enlisted and was appointed a captain in the medical department at Madison Barracks, St. Louis. He was later promoted to the rank of major and was made regimental surgeon of the Thirty-first Coast Artillery at Camp Eustis, Va. He was discharged from service in May, 1919, and returned to Pittsburgh and resumed his practice. He was a member of the faculty of the Medical School of the University of Pittsburgh and the Academy of Pittsburgh. He leaves his widow, two sons and a brother.

BIRTHS

The "stork" visited the home of Dr. and Mrs. J. A. Stockler, of Reading, recently.

Dr. and Mrs. J. J. Simkins, of Philadelphia, announce the birth of a son on November 23d.

Born, November 18th, to Dr. and Mrs. F. C. Lechner, of Montoursville, a son, Frederic Clemons, Jr.

MARRIAGES

THE MARRIAGE OF Miss Sarah Donehoo, daughter of Dr. and Mrs. R. S. Donehoo, of Pittsburgh, to Russell C. Tuckey, of Pittsburgh, took place on December 20th.

DR. SIMON L. VICTOR, a member of the Allegheny County Medical Society, and Miss Doris D. Levy, were married November 30th at the home of the bride's parents in Pittsburgh.

DR. EDWARD W. JEW, son of Dr. and Mrs. H. D. Jew, of Pittsburgh, and Miss Elsie M. Seeman, of Wilkinsburg, were married at the home of the bride's parents, November 30, 1922.

DR. EUGENE J. TRUSCHEL, of Pittsburgh, and Miss Helen Mildred Rupp, of Edgewood, were married November 23d in St. James' Catholic Church, Wilkinsburg. After an eastern trip, Dr. and Mrs. Truschel will reside in Pittsburgh.

MR. AND MRS. CLARENCE Z. MOORE, of Harrisburg, announce the marriage of their daughter, Miss Mary Frances Moore, to Dr. Oliver H. Swartz, of Middletown, on December 2d. Dr. Swartz is a graduate of the Medical School of the University of Pennsylvania, and during the war served as a first lieutenant in the Marine Corps.

ITEMS

DR. DONALD GUTHRIE, of Sayre, has been elected a fellow of the Southern Surgical Association.

DR. J. W. WARNICK, of Johnsonburg, recently fractured two ribs as a result of an automobile accident.

DR. E. LLOYD ROTHFUSS, an interne at the Williamsport Hospital, is recovering from a recent attack of typhoid fever.

DR. B. H. PATTERSON, of Wilkinsburg, has been elected to the Pennsylvania Legislature from the Tenth District of Allegheny County.

DR. JOS. G. STEEDLE, of McKees Rocks, has been reëlected to the Pennsylvania Legislature from the Twelfth District of Allegheny County.

THE TWENTY-EIGHTH ANNIVERSARY of the Harrisburg Academy of Medicine was celebrated at the Penn-Harris Hotel, Harrisburg, on the evening of November 24th. Dr. Lawrence Litchfield, of Pittsburgh, president of the Medical Society of the State of Pennsylvania, was the speaker of the evening, his subject being "Clinical Observation on the Management of the Diabetic and Prediabetic."

A MEMORIAL, IN the shape of a bronze statute, to the Service Men of the Allegheny County Medical Society, was unveiled at Phipp's Conservatory, Schenley Park, Pittsburgh, on the morning of November 30, 1922. Four hundred and fifty of the one thousand members of the Society have served in the World War. The participants in the ceremony were the Rev. W. J. Holland, Dr. E. B. Heckel, Dr. W. F. Donaldson, Col. Edward Martin, Dr. J. J. Buchanan, Dr. W. J. McGregor, and the Mayor of Pittsburgh, Hon. W. A. Magee.

COVERED WITH A thick coat of paint, "The Marriage of Isaac," believed to be the work of Paul Veronese, famous Venetian artist of the sixteenth century, has just been discovered. The painting has been in the possession of Dr. Ernest Laplace, medical director of the Misericordia Hospital, of Philadelphia, for many years, and was purchased by Dr. Laplace in a New Orleans auction room. Prof. Pasquale Farina, artist and expert restorer, of Philadelphia, has undertaken the delicate and difficult task of restoring the painting, which is five feet long and three feet wide. He set the tentative value of the canvas at "from $10,000 up."

RESEARCH INSTITUTE OF CUTANEOUS MEDICINE.—The Dermatological Research Institute of Philadelphia, having disposed of its real estate, plant and equipment to the Abbott Laboratories of Chicago, has been authorized by decree of the Common Pleas Court, No. 5, of Philadelphia, to change its name to the Research Institute of Cutaneous Medicine. A property has been purchased at the corner of 21st and Pine Streets, Philadelphia, which is being equipped for academic research in dermatology, syphilology and cognate subjects. Dr. Jay F. Schamberg, the director of the Institute, Dr. John A. Kolmer, head of the Department of Pathology and Bacteriology and a corps of full time laboratorians and technicians will conduct the investigative work in question. With the moneys accruing from the sale of the laboratories in addition to the funds already accumulated, an endowment fund of approximately three-quarters of a million dollars will be available for the support of medical research. The income from this fund will be utilized to carry on research work from year to year. Although investigative work in dermatology and syphilology is carried out in various hospitals and university clinics, this is the first instance of a permanent institute devoted to this special branch of medicine.

GENERAL NEWS ITEMS

THE PUBLICATION OF a new monthly magazine by the Board of Trustees of the American Medical Association has been announced. "Hygeia" is the name of the new journal and is a medical magazine for lay readers. It will be devoted to the development of individual and community health, based on the accumulated experience of generations of medical scientists in sickness prevention. The world's best writers, both scientific and popular, will strive to present their discussions in brief and simple terms.

THE NATIONAL BOARD OF MEDICAL EXAMINERS announces the following dates for its next examination:

Part I: February 12, 13 and 14, 1923.
Part II: February 15 and 16, 1923.

The fees for these examinations have been continued at the reduced rate for another year. Applications for these examinations must be forwarded not later than January 1, 1923. Application blanks and circulars of information may be obtained from the Secretary of the National Board, Dr. J. S. Rodman, Medical Arts Building, Philadelphia, Pa.

INTRAVENOUS THERAPY

During the past five years there have appeared in medical journals increasing numbers of articles on the subject of intravenous medication. A survey would indicate widespread employment of intravenous therapy in clinics and private practice.

Reports on clinical work done with Loeser's Intravenous Solutions in this country and abroad have brought about renewed interest in this method of administering remedies. Realizing that intravenous in-

jection is a serious procedure at all times, Loeser has developed methods of standardization that safeguard the patient and physician. Intravenous solutions require a higher standard than any other pharmaceuticals. It is a special field of work that demands specialized attention.

The demonstration of the safety and practicability of intravenous medication will prove of much benefit to the profession. This demonstration can only be accomplished with standardized, accurate, intravenous solutions.

The *Journal of Intravenous Therapy* contains many interesting abstracts on intravenous medication from American and foreign medical journals. If you have not received your copy, write in for it. The address is: Journal of Intravenous Therapy, 100 West Twenty-First Street, New York City.

BOOKS RECEIVED

I Believe in God and in Evolution, by William W. Keen, M.D., Emeritus Professor of Surgery, Jefferson Medical College, Philadelphia. Philadelphia and London: J. B. Lippincott Company. Price $1.00.

The Propaganda for Reform in Proprietary Medicines. Volume 2. Press of American Medical Association, 535 North Dearborn St., Chicago, 1922.

The Surgical Clinics of North America, December, 1922. Volume 2, Number 6 (St. Louis Number). Philadelphia and London: W. B. Saunders Company.

Regional Anesthesia; Its Technic and Clinical Application, by Gaston Labat, M.D., Lecturer on Regional Anesthesia at The New York University; Laureate of the Faculty of Sciences, University of Montpellier; Laureate of the Faculty of Medicine, University of Paris; Formerly Special Lecturer on Regional Anesthesia, The Mayo Foundation, University of Minnesota. With a foreword by William J. Mayo, M.D. Octavo of 496 pages with 315 original illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $7.00 net.

An Introduction to The Practice of Preventive Medicine, by J. G. Fitzgerald, M.D., F.R.S.C., Professor of Hygiene and Preventive Medicine and Director Connaught Antitoxin Laboratories, University of Toronto. Assisted by Peter Gillespie, M.Sc., C.E., M.E.I.C., and H. M. Lancaster, B.A.Sc., both of the University of Toronto. St. Louis: C. V. Mosby Company, 1922. Price $7.50.

Physical Exercises for Invalids and Convalescents, by Edward H. Ochsner, B.S., M.D., F.A.C.S., President, Illinois State Charities Commission; Attending Surgeon, Augustana Hospital, Chicago. Second Edition. St. Louis: C. V. Mosby Company, 1922. Price 75c.

Ophthalmoscopy, Retinoscopy and Refraction. By W. A. Fisher, M.D., F.A.C.S., Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College, Late Profesor of Clinical Ophthalmology, University of Illinois, etc. With 248 illustrations, including 48 colored plates. Published by W. A. Fisher, M.D., 31 North State St., Chicago, Ill. Price $4.00.

A Textbook of Human Physiology, including a section on physiologic apparatus by Albert P. Brubaker, A.M., M.D., LL.D., Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College, etc. Seventh Edition. Revised and enlarged, with 367 illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. Price $4.75.

Lectures on Dietetics. By Max Einhorn, M.D., Emeritus Professor of Medicine at the New York Postgraduate Medical School and Hospital; Visiting Physician to the Lenox Hill Hospital, New York. 12mo of 244 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $2.25 net.

The Treatment of Fractures; With Notes Upon a Few Common Dislocations. By Charles L. Scudder, M.D., Assistant Professor of Surgery at the Harvard Medical School. Ninth Edition, Revised. Octavo volume of 749 pages, with 1,252 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Polished Buckram, $8.50.

The Rockefeller Foundation Annual Report, 1921. The Rockefeller Foundation, 61 Broadway, New York.

Bibliography of Hookworm Disease. Publication No. 11. The Rockefeller Foundation International Health Board, New York City, 1922.

Clinical Medicine. Tuesday Clinics at the Johns Hopkins Hospital. By Lewellys F. Barker, M.D., LL.D., Professor of Medicine, Emeritus, Johns Hopkins University; Visiting Physician to Johns Hopkins Hospital, Baltimore, Md. Octavo of 617 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $7.00 net.

Animal Parasites and Human Disease, by Asa C. Chandler, M.S., Ph.D., Instructor in Biology, Rice Institute, Houston, Texas. Second Edition, Revised. New York: John Wiley & Sons, Inc., 1922. Cloth, $4.50.

Polaris (The Story of an Eskimo Dog), by Ernest Harold Baynes. With many illustrations from photographs by Louise Birt Baynes, John R. Baynes and the author. New York: The Macmillan Company, 1922. Price $1.50.

The Biology of Death, by Raymond Pearl, of the Johns Hopkins University. Philadelphia and London: J. B. Lippincott Company. Price $2.50 net.

BOOK REVIEWS

HUGHES' PRACTICE OF MEDICINE, 12 Edition; by R. J. E. Scott, M.A., B.C.L., M.D., New York. Publishers, P. Blakiston's Son & Co., Philadelphia.

Hughes' Practice of Medicine is so well known to the profession, and the fact that this is the 12th edition is proof sufficient of its popularity and value. It is a compact, concise volume on the practice of medicine, complete and brought up to date by the addition of new sections. It does not claim to be a complete work on the practice of medicine, but rather an easy help to the physician within the limits of a small manual. There is good balance in the causes, pathology, symptoms, diagnosis and treatment, with many prescriptions. The diagnoses are definite, the plans of treatment specific. In the treatment the author aims to give methods that have stood the tests of time, and consequently many present-day drugs are not mentioned. Throughout the book are many prescriptions from the author's own experience and from other sources. The arrangement of the text is, upon the whole, admirable. The book is therefore well adapted for use by the general practitioner who wishes quick information. J. B. McA.

REVIEW OF SKIN AND VENEREAL DISEASES. Practical Medicine Series, 1921, Volume VII, edited by Ormsby and Mitchell. The Year Book Publishers, Chicago.

One is struck with the ability of the authors to condense the literature in such manner as not to destroy the text and yet present it in English so clear that it is understandable to the average reader. The difficulty in the performance of this feat is appreciated by one who has had experience in abstracting.

The section on "gonorrhea" is marked by its brevity, no doubt due to paucity of the literature on this subject. Discoveries in this field have not been startling during the past few years. It is evidently the authors' intent to mirror the literature.

The section on "syphilis" covers the field in an admirable manner. A striking feature, valuable to the general profession, is the criticism by the authors of certain procedure used in treatment. A reading of this little volume will go far toward enlightening the doctor in the latest methods of handling a disease which in its various manifestations is encountered daily. It is hard to imagine in what better manner the subject could be presented to the busy doctor.

S. L. G.

THE ASSESSMENT OF PHYSICAL FITNESS, by Correlation of Vital Capacity and Certain Measurements of the Body. By George Dreyer, C.B.E., M.A., M.D., Fellow of Lincoln College, Professor of Pathology in the University of Oxford. In collaboration with George Fulford Hansen. With a Foreword by Charles H. Mayo, M.D., Rochester, Minn. Cloth, pp. 128, with xxiv tables. Price $3.50 net. New York: Paul B. Hoeber.

The value of an examination of the structural proportions of the body as an aid to the proper estimation of the condition of the human subject is only recently receiving the recognition it deserves. One needs only pause and consider to concede at once that the size and strength of such vital organs as the heart and lungs, in relation to the general bodily structure which depends upon these organs, will indicate the stamina and resistance of the organism as a whole, other things being equal. Such facts have been demonstrated time and again in studying the ability of athletes in conjunction with their physical findings; the same holds true in the matter of resistance to the wear and tear of modern life or to infection. Hence, a study of the physical characteristics of the human body is of value in estimating the stamina of the individual. Having determined this stamina or reserve strength and balancing it with the demands made upon it by the mental or physical activities of the patient, or by infection or other pathological process, the physician is better able to judge the present and future condition of the patient. In this volume the author presents his method of assessing the physical fitness by determining the relationships between the weight of the body, the length of the trunk and the circumference of the chest; and also between these bodily measurements and certain functional measurements, such as vital capacity. Although these relationships are comparatively simple, the process of calculating each of them necessitates the expenditure of so much time and attention that they would be little used for practical routine examinations if separate calculations for each case had to be made. In order to avoid this, Dr. Dreyer has constructed tables by means of which the desired relationships can be quickly and easily established. This volume, in fact, is made up principally of these tables, with the necessary directions as to how to use them. Discussion as to the proper interpretation of the measurements is very brief, the book being essentially the presentation of a method of determining the normal relation of body size and vital capacity. The significance of variations from the normal is yet to be definitely established. R. R. S.

TUBERCULOSIS IN INFANCY AND CHILDHOOD. By J. Claxton Gittings, M.D., Professor of Pediatrics in the Graduate School of Medicine, University of Pennsylvania; and Frank Crozer Knowles, M.D., Profesor of Dermatology in the Jefferson Medical College; and Astley P. C. Ashhurst, M.D., Associate Professor of Surgery, School of Medicine, University of Pennsylvania. J. B. Lippincott Company, Philadelphia and London. Price $5.00.

Tuberculosis must be taken into account in the consideration of most of the subacute or chronic diseases of childhood, as well as in many of the acute conditions. The majority of the special works on tuberculosis contain valuable chapters on the disease in early life; and the books on pediatrics also devote space to this important subject. In either case, however, the consideration of tuberculosis in infancy is necessarily limited; yet it is one of the most important diseases of early life. Hence this work, as a more comprehensive presentation of the diagnosis and treatment of this condition, meets a real need. The authors have covered their subject admirably. The subject of tuberculosis is introduced by a consideration of the various etiological factors—types of tubercle bacilli and their relative importance, childhood infection and immunity, methods of dissemination and modes of infection. A chapter is devoted to the general principles of diagnosis of tuberculosis, from the carefully elicited history to the complete examination, including also the constitutional symptoms which are more or less common to all forms of the disease. The value of tuberculin in diagnosis is much greater in early life than at any other period, and detailed instructions are given for the application of the various tests. The clinical consideration of specific forms of tuberculosis begins with disease of the cervical nodes, with especial reference to differential diagnosis. Then follow the subjects of tuberculosis of the mouth, respiratory tract, ear, eye, pleura, heart and pericardium, gastro-intestinal tract, peritoneum, the viscera and the genito-urinary tract. A chapter is devoted to tuberculous disease of the skin, and another to that of bones and joints, while the greatest space is given to miliary and generalized tuberculosis and meningitis, the most common forms seen in infancy. The final chapter gives a full and detailed description of the management and treatment of the tuberculous child. This work is a gold mine of information, valuable alike to the general practitioner, pediatrician and orthopedist. Almost every page presents facts that are interesting, valuable, even startling. One reads without effort, the attention being held by the logical presentation of interesting data in unusually lucid style. Moreover, all statements are soundly based on extensive personal experience or the experience of other authorities. The whole work is a beautiful presentation of an interesting and most important subject, and could be read with profit by every physician.

R. R. S.

ENDOCRINE GLANDS AND THE SYMPATHETIC SYSTEM. By P. Lereboullet, P. Harvier, H. Carrion, and A. G. Guillaume. Translated by F. R. Mason, M.D., with the collaboration of D. R. Ayres, M.D. J. B. Lippincott Company, Philadelphia, 1922.

The original work is by four physicians of Paris, each of whom discusses certain phases of the subject, and the translation has been done by F. R. Mason, M.D., and D. R. Ayres, M.D., of New York. Many disturbances result from disease of the endocrine glands and unfortunately associated with these there is one seen in some who write about them—a loss of the ability to distinguish between fact and fancy, between the proved and the uncertain. Perhaps we should accept this as inherent in the subject for we must confess that much of the investigation of endocrine glands has to be done without exact methods. A certain degree of speculation is proper but many writers have gone to extreme degrees and the average reader knows not what to believe. He certainly should cultivate a healthy spirit of doubt. Compared with some other works on this subject, this one shows more of the critical faculty.

The first section by P. Lereboullet is a general introduction which reviews the physiology, clinical syndromes and general therapy of the endocrine glands comparatively briefly but sensibly and conservatively. He sounds a wise note of warning as to the dangers of error through hasty interpretation. This seems to be the most satisfactory part of the work.

The second section by P. Harvier, deals with the "pathology" of the endocrine glands, under which is included the symptoms and signs of the disorders. The word pathology is not used here in its usual English significance. The discussion of diseases of the thyroid gland follows the usual descriptions but some important points are lacking. There is no mention of thyrotoxin or of adenomatous goitre, while the discussion of basal metabolism is limited to a footnote of thirty-three words in which there is a flagrant error in English construction. The disorders of the parathyroid gland and the pituitary gland are discussed satisfactorily. The consideration of diseases of the thymus gland omits important work of recent years, such as that of Symmers and the description of lymphatism in adults, largely given by American workers. Naturally one comes to the discussion of the suprarenal glands with interest and apprehension as our Gallic brethren are fond of building structures on insecure foundation in this field. That many of the disturbances of the circulation following diphtheria are due to adrenal insufficiency is not proved, and the same may be said of the statement that erythema in an acute infection is often indicative of acute inflammation of the adrenals. The discussion of the clinical picture of hyperfunction of the adrenals is so mixed with the symptoms of chronic nephritis that it is difficult to separate them, but the impression is given that the features of hypertensive renal disease are due to adrenal hyperfunction, which certainly lacks proof. The discussion of testicular insufficiency seems rather fanciful and on the other side the statement that "Hyperorchidia can be produced by progressive training" is somewhat cryptic. What kind of training? Doubtless many would wish more details but they are not given. The discussion of pluriglandular syndromes keeps within proper limits and the absence of speculation is to be praised.

The third section by A. G. Guillaume, deals with the sympathetic system. There is no doubt of the importance of a knowledge of the sympathetic system for the explanation of many problems in general medicine and in any discussion of disease of the endocrine glands. The common unfortunate confusion of terms to designate the two systems is in evidence for a time. Any writer on this subject should make his usage very clear as the writer does in the latter part of his article. In general this is a useful section and to be commended.

The "pathology" of the greater sympathetic is discussed by P. Harvier, and in general fairly satisfactorily. The difficulty of drawing clear pictures of vagotonia and sympathicotonia is brought out. The section on localized sympathetic syndromes is useful as long as conditions above the diaphragm are discussed. Below the diaphragm under the designation "Solar Syndrome" conditions are described which American medicine does not usually recognize. We may be overlooking them, but the section does not carry conviction.

The last section on organotherapy by H. Carrion, is a mixture of good and bad. The discussion of gastric, hepatic, and pulmonary organotherapy is fanciful, to say the least. What is the authority for speaking of an internal secretion of the lung? The statement that blood-forming is a normal function of the spleen may be questioned.

There are puzzling expressions such as incoercible vomiting, glycosuria tremors, comatous phenomena, the urines rare (apparently meaning scanty excretion and not unique specimens), and oxalic patients. The designation Mrs. Dejerine has an odd look. The term encephalitis is employed frequently but not apparently in the usually understood sense as, for example, it is given as one result of hyperfunction of the suprarenal glands. These examples suggest that greater care might have been taken in the translation.

This work contains something of value and the idea of discussing the disturbances of the endocrine glands with the sympathetic system is an excellent one. For the worker who already knows the subject there is little new information, but for the beginner some of the discussions put our knowledge in a satisfactory form. There is the proviso, however, that some important newer work is not noticed and that some fanciful notions are given as if proved and generally accepted.

Thomas McCrae.

"X-RAY DOSAGE IN TREATMENT AND RADIOGRAPHY," by William Daniel Witherbee, M.D., in charge of Radiotherapy, Presbyterian Hospital, New York; and John Reimer, M.D., in charge of Radiotherapy, New York Hospital, is a small handbook of 87 pages dealing with the important subject of practical x-ray dosage. Published by the Macmillan Company of New York.

The book is mostly a compilation of the substance of scientific papers previously published by the authors. Formulæ are prepared for the student and practitioner to meet almost all conditions in which voltages up to about 100,000 are to be used. They claim no experiences with the higher voltages. Unfortunately these formulæ do not take into account all of the physical laws governing radiation. For instance, they estimate the increase of radiation directly with the increase of the voltage instead of increasing by the square of the voltage. Still, the application of these formulæ in superficial conditions has apparently been proven practical by a very large experience; therefore they must be considered useful, and this fact makes the book valuable and desirable, for the use of unfiltered rays.

The formulæ are, however, not accurate for filtered rays. For instance, thousands of doses have been given with four times the radiation as indicated in the formula for 2 mm. of aluminum, and with three times that indicated for 6 mm. of aluminum, without doing any damage to the skin or without producing more than an erythema. There is also a variation in the output of different machines, with the same voltage and milliamperage.

G. E. P.

THE HEALTHY BABY. The Care and Feeding of Infants in Sickness and in Health. By Roger H. Dennett, B.S., M.D., Professor of Diseases of Children and Director of the Department in the New York Postgraduate Medical School, etc. New York: The Macmillan Company, 1922. Price $1.25.

The second edition of Dr. Dennett's book, "The Healthy Baby," is arranged in a very attractive form and his ideas are expressed in his usual plain and forceful manner. The publishers have recognized that the contents of the book cover a larger subject than the title suggests and therefore modify it by stating it includes, "the care and feeding of infants in sickness and in health."

The subject matter is carefully arranged in the table of contents and special subjects may be very readily found in emergency in the index.

Some of the doctor's statements seem a little too comprehensive, but a difference of opinion may account for this discrepancy. "Insufficiency of food is best discovered by the scales," applies only to quantity, when quality or an unbalanced ration seem to be more important factors in the diet of many children. "Owes his ill health to lack of sleep," hardly reaches the source of the trouble in many pale, washed-out looking children.

In this period of radical ideas regarding the danger of raw milk, it is refreshing to see the doctor is steadfast in his use of a pure, clean raw milk, and his advice will certainly remove many doubts from a mother's mind when artificial feeding becomes a necessity for her baby.

The chapter on training and discipline should be committed to memory by most mothers.

Under the discussion of convulsions the statement that, "Epilepsy is started by one convulsion predisposing to another," is a little too emphatic for the etiology of this condition and might cause much unnecessary worry.

The subject of circumcision is much discussed pro and con, but from the statement of dangers likely to develop, it seems that an early operation is indicated to avoid these possibilities.

(Continued on page xiv)

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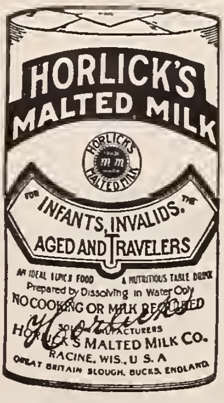
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(Continued from page 282)

Feeding advice is sound and enough variation is suggested to care for the needs of most healthy children. Altogether this book should be appreciated by any young mother who seeks instruction in it for the care of her child. H. T. PRICE.

SURGICAL AND MECHANICAL TREATMENT OF PERIPHERAL NERVES. By Byron Stookey, M.D., with a chapter on Nerve Degeneration and Regeneration, by G. Carl Huber, M.D.

This volume is essential to the neuro-surgeon. The general surgeon will profit by reading the chapters on "The Technique of Nerve Suture," "Indication for Operation," and "Mechanical Treatment." Throughout, the author has drawn constantly from the contributions by other authors. The chapter on "Nerve Degeneration and Regeneration," by Dr. G. Carl Huber, is especially noteworthy. The illustrations are numerous and excellent. J. O. BOWER.

PRACTICAL CHEMICAL ANALYSIS OF BLOOD. By Victor C. Myers, Ph.D., Professor of Pathological Chemistry in the New York Postgraduate Medical School and Hospital. C. V. Mosby Co., St. Louis, 1921. Price $3.00.

The avowed object of this book is "to present briefly a discussion of the chemical blood determinations which have been found of definite value in the diagnosis and treatment of disease." The author has fulfilled his purpose very well. The various chemical elements of the blood of proven clinical significance are taken up, one by one, and discussed thoroughly. The normal and abnormal amounts and the clinical interpretations are set forth clearly and simply; there is also given, in each case, one method for its determination. In this way are considered nonprotein and urea nitrogen, uric acid, creatinin, blood sugar, carbon dioxide (combining power in blood), cholesterol and chlorides. In addition to these chapters there is a chapter devoted to the general clinical value of the chemical tests, with examples as to how they may be used; and chapters on interpreting reports, comparison of various methods, the phthalein test, simple chemical tests on the urine, and standard solutions and reagents. This book would be very interesting and valuable to the physician who needs enlightenment on the fundamentals of blood chemistry. A careful study of it would give him a true conception of those chemical substances of known clinical significance. It would also acquaint him with the difficulties of the quantitative tests for these substances. As a practical laboratory manual it is hardly complete enough to be of any great value to an experienced laboratory worker; but to the general practitioner it would be of real interest and value.

R. R. S.

OBSTETRICAL NURSING. A textbook on the nursing care of the expectant mother, the woman in labor, the young mother and her baby. By Carolyn Conant Van Blarcom, R.N. Cloth, price $3.00. Pp. 558, with 208 illustrations. New York: The Macmillan Company, 1922.

This book is preëminently the best that has been offered to the profession, on obstetrics, having been written by a woman of mature experience for women and in a language which they understand. It should inculcate in the minds of nurses in training the human sympathy, which is so valuable and yet which is so often missing, as well as giving them a thorough, scientific basis for their work. It is especially to be commended in the clearness and completeness of the prenatal care suggested, as well as the technique of delivery and puerperal care. It is amply illustrated in places where illustration assists in clarifying the text, and in all it can be recommended to training schools as a textbook full of much value.

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ORIGINAL ARTICLES

OBSTETRICAL SYMPOSIUM

THE PRESENT STANDARD OF OBSTETRICAL PRACTICE IN RURAL PENNSYLVANIA*†

CLOY G. BRUMBAUGH, M.D.
HUNTINGDON

During the last two decades the standards of obstetrical practice have lagged so far behind in the general advance common to other branches of medicine that one may well pause to inquire the reason. The internist has developed a refinement of diagnosis and the surgeon a precision of technique unequaled in the entire previous history of medicine. With the exception of the application of the principles of asepsis, no great advance has been made in obstetrical practice since Sänger in 1882 advocated conservative cesarean section with closure of the incised uterus by suture. Numerous obstetrical procedures have been for a time prominent in the minds of both the profession and the laity as offering hope of greater safety and comfort in the childbearing act, only to bring disappointment when their true value was determined. The so-called "twilight sleep" was followed by rude awakening to the realization of its danger and impracticability. Recently the proposal of routine delivery by internal podalic version has been brought to our attention, and will be rejected on account of its high infant mortality rate, even in the hands of its author, and as too dangerous to the mother when performed by one not specially trained in obstetrical surgery. To the author of this latter procedure we are indebted for an improved technique in the performance of version when that operation is indicated.

It is a reproach to our civilization that approximately 20,000 mothers perish annually in these United States as a consequence of the childbearing function. It is an even greater reproach that during the past twenty years the combined mortality rate from obstetrical causes has actually increased. That this increase is in a measure due to less conservative methods cannot be doubted.

The increasing frequency of the use of forceps and the unwarranted use of pituitrin in an effort to shorten labor and relieve pain cannot be too severely condemned. In some localities it is routine practice to administer pituitrin, regardless of all contraindications, to every patient who does not give evidence of speedy delivery; and failing to effect delivery within a half hour, forceps are used. This practice cannot be too severely condemned. Pituitrin is a powerful drug. The only indication for its use before delivery is as a substitute for the low forceps operation with no obstruction or abnormality of position. One who has seen the immediate and violent contraction that follows the injection of one-half c.c. of pituitrin into the fundus of the uterus immediately after delivery by abdominal section, will not again use it before delivery is accomplished without good and definite reasons. By the law of nature labor is a physiological process, and in 90% of all cases this law holds constant. Spontaneous labor should be expected and accomplished wherever possible, for therein lies the greatest safety to mother and child.

Our undergraduate teaching institutions are not entirely blameless for the present unsatisfactory conditions of obstetrical practice. Too much time is spent in the demonstration of major operations and not enough on the actual conduct of normal labor under adequate supervision. Accuracy of diagnosis should be the foundation of all obstetrical teaching; and the man entering the field of general practice should no more be encouraged to attempt a version, unaided and ill equipped, at the unholy hour of midnight, than to do an appendectomy under similar circumstances. He should know that infectious organisms are equally deadly whether they gain entrance through an abdominal incision or the open birth canal. At the same time the public should be educated to a realization of the fact that special training is essential to the safe performance of either operation.

The following is an analysis of one hundred consecutive referred cases delivered in the Blair

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

†From the Obstetrical Division of the Blair Memorial Hospital.

Memorial Hospital, all of whom had a test of labor outside, or were diagnosed as pathological before being referred to my service. Of these, 54 resulted in spontaneous delivery under appropriate analgesia. Obstetrical operations to accomplish delivery were done in 46 cases, as follows:

Forceps	17
Breech extractions	8
Version	5
Section	4
Manual conversion of persistent occiput posterior	9
Induction of labor	3

Of the 100, 4 mothers died; 2 of eclampsia, the convulsions persisting after delivery; 1 of pulmonary embolism, and 1 of surgical shock following section. The fetal deaths were 11, including still births. There were 2 cases of puerperal sepsis, both recovering.

In the above series eclampsia appeared 11 times, and in no case had there been any adequate prenatal supervision. Only 2 of the 11 had had the benefit of even one examination of the urine for albumin prior to the onset of actual eclampsia. Two patients, in whom existed absolute disproportion between the fetal head and the pelvic outlet, were allowed to continue in active and ineffectual labor for 48 and 72 hours respectively; and 2 cases of transverse position of the fetus were unrecognized as such before being sent to the hospital. Of the 54 who effected spontaneous delivery, the majority were sent in as being suitable cases for immediate forceps delivery. These facts constitute a serious indictment against the man in general practice.

With the vast amount of publicity now being given to the subject of prenatal and maternity care by various powerful lay journals, it behooves us to shake off our lethargy and take our rightful place as leaders in this important branch of welfare work. Under the supervision of the State Department of Health, prenatal clinics are now being established in the more populous rural centers. They are as yet few, but more will be added as their use and influence grows. Here, as in charity wards of our hospitals, the very poor will get the best. Those in moderate financial circumstances will continue to look to the family doctor for safe guidance through the most important epoch of family history. If he can make intelligent use of a few simple reagents, the ancient art of abdominal palpation, and a pelvimeter; if he has patience and an aseptic conscience, the confidence of the patient will not often be misplaced.

Nor are our rural hospitals doing their full duty to the communities they serve. Many of our large city hospitals are open to the same criticism. Outside of the teaching hospitals, an obstetrical service worthy of the name is a rarity. Common usage permits any man who has hospital privileges, regardless of his surgical training, to do any major obstetrical operation short of cesarean section. The referred cases fall to the general surgeon. I am fully convinced that this is not always most advantageous to the patient. The usual procedure is forceps, regardless of indications; and failing in this section is done. Can we doubt that maternal morbidity and fetal mortality are unnecessarily high?

Hospital practice is group medicine at its highest development, and the obstetrician is as essential to the perfect balance of the group as is the internist, the pathologist or the general surgeon. To the mind of the surgeon an obstetrical patient presents only a surgical problem. He may be brilliant in the technique of the operation he performs on such a patient, but his judgment is likely to be faulty in the application of the operation to that particular case. The obstetrician, with clearer vision of a restricted field and profiting by a wealth of experience in that field, will many times conduct his patient through safe delivery without any operation, or will choose more certainly the operation most suitable to her necessity.

THE MORE IMPORTANT OBSTETRICAL EMERGENCIES MET BY THE GENERAL PRACTITIONER*

G. VICTOR JANVIER, M.D.†

LANSDOWNE

We shall not discuss to-day any new scientific discoveries or newly specialized methods of treatment, but endeavor to impress anew and again important obstetric facts, whether neglected or slightingly considered because of the terrible pace at which everyone is traveling. Moreover, any scientific truth, any measure which improves technique and skill, any important procedure, all these collectively or individually, will be more firmly fixed in mind by occasional review.

Those of us who really enjoy obstetrics do realize and those who are compelled to practice it should realize that the six headings of our paper include those emergencies which require us to be unusually quick of eye and prompt in action. They demand sound judgment, developed by experience perfected through careful observation and collateral reading. Now for our headings—

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

†Assistant Obstetrician to the University of Pennsylvania Hospital and the Philadelphia General Hospital.

I. THE NECESSITY OF KNOWING THE INDICATIONS FOR CESAREAN SECTION BEFORE LABOR BEGINS.

The first two indications for cesarean section which we wish to establish are:

A. The borderline case of contracted pelvis which may cause serious complications in labor. Here rectal examination and careful observation during a fair test of labor will decide us for or against cesarean section.

B. The overgrown fetus with large head out of all proportion to the size of the bony pelvic inlet. Here, by antepartum fetometry and comparative pelvimetry, we should determine before labor what is likely to happen. Often (even with normal maternal pelvic diameters) the large head cannot be pushed down below the top of the pubic symphysis, and obstructed labor must be anticipated, rectal examination must be practiced when labor starts, and a careful test of progress during labor must be given.

Remember that the use of axis traction forceps is fast falling into deserved disrepute, and the hazards to mother and baby are being eliminated by a wise decision for cesarean section when indicated. Our friendly enemies and ready critics, the gynecologists, will have fewer cystocœles, rectocœles and ragged cervices to remind us of our lack of skill and judgment, when we are alive to the value of well-chosen section in these cases.

More frequent and careful rectal examinations, more carefully observed tests of labor, will forever put the destructive high forceps in the show case, with other antiquated instruments of obstetric torture and folly. Therefore, we contend that no primipara, and no multipara with history of previous difficulty of any kind, should be allowed to go to term, by even the busiest physician, without careful observation during pregnancy.

C. The third point for emphasis under this first heading is to know when to section a breech case. Time will not allow much elaboration, but the definitely positive indication for cesarean section in breech presentation, before labor starts, is the elderly primipara over forty. This is just the case where a live baby is wanted by the woman fast nearing the menopause. Nature will allow her but a brief time at best for productivity. And yet, this is the very case in which most men are utterly blind to danger. A prolonged, serious, exhaustive labor, horrible maternal lacerations and a dead baby are practical certainties, unless cesarean section is done before labor starts.

D. Under the heading of the more important indications for cesarean section before labor begins must be included eclampsia. We would, however, insist here on a warning against routine cesarean section in eclampsia, before a trial of twenty-four hours of elimination treatment. The eclamptic is a very bad surgical risk at best but can often be led up to a favorable operative outcome, if conservatism is first practiced for twenty-four hours—not more.

E. Hydrocephalus observed before labor begins sometimes demands cesarean section as opposed to craniotomy, because of the more or less recent introduction of spinal drainage from the third lumbar interspace into the perirenal connective tissue. The men of widest experience say it is sometimes impossible to determine definitely in any way that a fetus, hydrocephalic or normal, is dead in utero. Therefore, in selected cases, it is incumbent on us to section the mother and call in the surgeon to share the responsibility with regard to the baby. Our personal opinion, however, is that this whole procedure is of doubtful value.

II. Our second heading is MALPRESENTATIONS. Here is one place in obstetrics where there is no excuse for superficial examination and snap diagnosis. A monster may be suspected from a strange contour and from an abnormal size of the abdomen, suggesting twins. Careful palpation may possibly suggest it also. We have seen just such a case on our service at the Southeastern Dispensary of the University of Pennsylvania Medical School. However, we hold no brief as to the ease or certainty of a diagnosis of monster before labor, except by x-ray, after the fifth month.

Face and *brow presentations* will need a few words of review.

In such cases while anterior chin very often causes a difficult and prolonged labor, the labor usually ends spontaneously, but oblique episiotomy—not central—is required in order to avoid a complete tear. (5 o'clock on the face of a clock.)

Posterior chin in face and brow position is a source of one of the greatest crimes in present day obstetrics. Why do men still persist in using forceps in a posterior chin position and pulling on the blades as if they were playing at tug-of-war? Posterior chin position is almost an insuperable obstacle to safe delivery. Traction on the forceps only tears out the muscles, nerves and vessels in the neck of the fetus. Delivery can be accomplished only in one of four ways: 1, rotation and conversion into a chin anterior; 2, version; 3, extraperitoneal cesarean section, if membranes are ruptured and many examinations have been made; 4, craniotomy, if a dead fetus is positively proved.

Transverse and Shoulder Presentations: There is no excuse for failure to diagnose these presentations early, even in the hands of the physician of but meager obstetric experience. A transverse presentation gives us the peculiar left to right configuration of the abdomen, high fetal heart sounds and absence of presenting part low down.

Shoulder presentation is easily differentiated from breech presentation by the absence of fetal anus, absence of any marked smear of meconium on the examining finger and by the fact that a male breech would have a scrotum with testicles easily palpable. Moreover, we have Dr. J. C. Hirst's sign, the "paling-fence feel" of the ribs, always easily elicited in shoulder presentation.

Version, the operation of choice in transverse and shoulder positions, should never be performed in a late diagnosis where the membranes have been ruptured for any length of time, or where the uterine body is firmly moulded down over the fetus. Here, where many examinations have been made under questionable asepsis, extraperitoneal cesarean section is definitely indicated, except where it can be proved that the fetus is dead. Version under these circumstances will positively result in a ruptured uterus.

Lastly, pituitrin should never be used where a malpresentation is even suspected, on account, of course, of the great danger of rupture from tumultuous and excessive uterine contraction.

III. Hemorrhage is our third emergency, and under this heading the following causes may be mentioned: A, placenta prævia; B, premature separation; C, forceps tears. A brief differential diagnosis between these first two conditions may be appreciated by some of us:

Placenta Prævia	*Premature Separation*
Begins any time in pregnancy.	Begins in last month, or early in labor.
No history of fall or violence.	Possible history of violence.
No pain.	Pain at placental site, later becoming general.
Uterus does not become tense.	Uterus large and tense.
External hemorrhage profuse.	Hemorrhage usually slight and external anyway in only 50% of cases.
Symptoms proportionate to loss of blood.	Symptoms out of all proportion to loss of blood.
Os patulous or dilated.	Os may not be dilated even if in labor.
Placenta can be felt.	Placenta cannot be felt.
Fetal movements and heart sounds usually unchanged.	Fetal movements and heart sounds usually disappear.
No signs of ruptured uterus.	May get signs of rupture from degenerative changes in muscle at placental site and consequent rupture when pains start.

Placenta Prævia demands section if central, if marginal with prolapsed cord, if lateral with undilated os and great hemorrhage. Forcible dilation of the os by hand (very difficult and tiring and slow) or Dührssen's incisions are most dangerous. Cutting and tearing through the placenta can hardly be done speedily enough to guard against further hemorrhage, before the breech is brought down to produce pressure and act as a plug.

We have no patience with bags, which invariably cause a torn cervix, nor with packing because it—like the bags—is not efficient. Where several examinations under questionable aseptic technique have been made, extraperitoneal cesarean section is the operation of choice. Where infection is self-evident, section, with removal of the uterus at the level of the cervix, is sometimes advisable.

Premature separation of a normally situated placenta at term requires keen judgment and quick action. The classic symptoms are familiar to you all. Here we have no patience with those who temporize with vaginal packing. The *sine qua non* is to deliver the patient rapidly and with as little shock as possible. Where any doubt exists as to the speedy dilatability of the os, or as to an easy and quick vaginal delivery, cesarean section is indicated.

Experience alone teaches us to be conservative or radical. Where section is not done, we are accustomed to pack the uterus to its fundus, and the vagina tightly, following this with an ampoule of ergot and one of pituitrin hypodermatically, at once after delivery. Stimulation is strongly indicated here, if in any obstetric procedure.

Our last subheading under hemorrhage is that from *forceps tears.*

A forceps delivery, even if of only slight difficulty, may be potentially very serious. In 1915, in our work at the Southeastern Dispensary, we had one fatal hemorrhage from a forceps tear an inch wide, in the posterior vaginal vault. We overlooked this because we failed to examine our patient after the use of forceps! Shock set in very soon with no evidence of abnormal external bleeding.

With a history of a twenty-four hour labor in the above case, we should have exhibited more gentleness in the delivery, and more care in examining immediately after. Immediate examination would have shown us the necessity for quick clamping and packing and this patient's life would have been saved.

IV. Prolapsed cord: We have time for a few words only on this subject. It is most commonly seen in flat pelves, just after the membranes have ruptured, and may also be seen in any other cases at the same stage of labor. Hence, it is our practice in every case possible to examine vaginally at once after the membranes have ruptured. Do not get the idea that the Trendelenburg position is the only requirement. Action is demanded at once by completing the dilatation rapidly, followed by delivery by forceps or version.

V. Rupture of the uterus may be A, spontaneous, or B, may occur during labor.

Spontaneous rupture of the uterus, with a consequent presupposition of labor having not yet started, is a very rare condition and but few cases have been reported in the literature. This year we have personally seen one such case, which started in (perhaps as a result of a very slight fall) as a premature separation and wound up as a spontaneous rupture. Therefore, falls should put us on our guard at all times. We sectioned the above case and found a separation of a high anterior-situated placenta, which, in the degenerative process of separation, had caused a tear in the muscle three inches wide, plugged by the placental mass. The signs of severe hemorrhage or profound shock were not in evidence at any time.

Rupture of Uterus During Labor: This accident became very common in the early days of pituitrin. At our Southeastern Dispensary in 1911 and 1912 we were accustomed to give a whole ampoule where indicated and were lucky not to have any calamities. We soon cut down the dose one-third, after the literature began reporting cases of rupture. The classic rupture occurs in only one in three thousand cases, more frequently in multipara and more frequently in years from thirty to forty because of lack of muscle tone. It should be recalled, too, that obese women and syphilitics are predisposed for obvious reasons. Rupture may be complete through the peritoneum, or incomplete where the peritoneum escapes.

A brief résumé of the predisposing causes includes old inflammation of the uterine muscle, congenital malformations, fibroids, and placenta prævia.

The exciting causes include overdistention of the lower uterine segment in neglected obstructed labors, perforation by hands or instruments, contraindicated podalic version, injudicious use of ergot and pituitrin.

The anterior ruptures are, of course, more serious than the posterior; and the nearer the uterine cornua, the greater the hemorrhage.

Premonitory, or early symptoms of rupture are: 1, long-continued labor with no advance of the head, or with malpresentation; 2, overdistention of the lower uterine segment; 3, high position of Bandl's contraction ring; 4, just before rupture, appearance of an area of great tenderness over the lower uterine segment.

Bandl's contraction ring should not be confused with a full bladder, as the differential diagnosis is very easy. The nearer the contraction ring is to the umbilicus, the greater the danger of rupture, and the more serious the hemorrhage.

Actual symptoms of rupture are: 1, sudden, sharp, stabbing pain; 2, shock; 3, usually but little bleeding to be seen externally, but profuse intrabdominal bleeding; 4, labor pains cease; 5, presenting part is gone, and uterus slips over the fetus, which is extruded into the abdominal cavity; 6, intestines can often be felt through the rent, also possibly omentum.

Briefly, the differential diagnosis from premature separation is as follows: 1, rupture occurs late in labor as a rule; 2, rupture has premonitory signs, which premature separation has not; 3, rupture causes a diminution in size of uterus, premature separation a marked increase in size and tension.

A word of caution must be given here: Never give ergot or pituitrin in mistaking a distended lower uterine segment for inertia.

Another word of caution not seen in the textbooks is this: After a difficult forceps case, and after every podalic version, extract the placenta manually in order not to overlook a possible rent in the uterine muscle, occurring without shock or other symptoms.

Treatment: The preventive treatment demands antepartum fetometry and pelvimetry, vigilant expectancy and early examinations in labor, with early recognition of obstruction of any kind. "Once a cesarean, always a cesarean," is no longer a hard and fast rule with us. Because one man has bungled and made cesarean section necessary is no reason why we should not by proper management and precaution make a second cesarean unnecessary in many cases.

Active treatment: Incomplete rupture may be brought through successfully by daily packing with sterile or iodoform gauze, but the *sine qua non* is great gentleness, lest by examination or by packing we go through a previously unbroken peritoneum.

Complete rupture requires immediate section with hysterectomy below the site of rupture.

Any case of ruptured uterus recovering spontaneously should never again be allowed to fall in labor, but should be opened two weeks before term by the abdominal route.

Repair of ruptured uterus is seldom practiced now because of almost certain leakage from the wound, no matter how tightly sewed, and a consequent fatal peritonitis.

vi. Ectopic gestation is seemingly becoming more common, but only because it is now being recognized earlier. Although the differential diagnosis is often most difficult, there is never an excuse for not being on guard in even a suspicious case. The general practitioner, far from other medical contact, never even majoring in obstetrics, should be able to make a fairly sure guess as to what he has, when even only a few of the classic symptoms are present. Moreover, let us remember that it is seen once in every five hundred cases; and many physicians deliver three hundred women a year.

Any case presenting the following signs in part or in toto can be banked on as ectopic:

1. In multipara with no pregnancy for several years, one or two missed periods followed by irregular bleeding.

2. Fairly certain history of sixth to tenth week of pregnancy.

3. Sudden, violent, stabbing, shocking pain in lower abdomen, causing fainting and later marked nausea.

4. Intervals of no pain with paroxysms of increasing frequency and severity.

5. Soon signs of internal hemorrhage.

6. Possible discharge of decidual masses, described by patient as "pieces of flesh."

7. Possible absence of all symptoms until violent attack of pain with signs of internal hemorrhage and shock.

8. Slight negligible temperature; slight leucocytosis, which is of but little significance.

9. Vaginal examination reveals an exquisitely tender mass to one side and behind the uterus, which does not conform in size to the stage of pregnancy.

10. The cervix is subjectively tender on the slightest motion and often objectively to the finger.

We have no patience with the man who dares to confuse ectopic gestation with incomplete abortion. If he really knows what to look for, even though he has never seen a case, he will not be misled.

Ectopic pregnancy may, however, be confused with hemorrhage from a ruptured varicose vein of the broad ligament, severe hemorrhage from the wall of a ruptured graafian follicle, acute salpingitis with or without coincident intra-uterine pregnancy, ovarian cyst twisted on its pedicle, and appendicitis with or without coincident homolateral or contralateral extra-uterine pregnancy.

Treatment: The treatment is quick action in combating shock and loss of blood, getting the patient immediately to a hospital for careful observation and further shock treatment, and section at once, or without much delay.

Immediate hospitalization, although later proving unnecessary, as opposed to watchful expectancy at home, will do us less harm, because of our so-called alarmist tactics, than one death from hesitation in an undiagnosed extra-uterine pregnancy. However those of us who have handled obstetric calamities for any length of time soon realize that we are damned if we "do" and cursed if we "don't."

Do not forget that extra-uterine pregnancy may go to full term and that simultaneous extra-uterine and intra-uterine pregnancy has been reported more than once.

We wish to mention here an interesting case of the above condition, which we anesthetized in 1910 for a very clever but daring operator. Diagnosis of simultaneous extra-uterine and intra-uterine pregnancy at the eighth month was made following signs of premature labor and profound shock. The patient was a young colored primipara. Section was performed on a cot, in a third story servant's room with no assistant. The above mentioned diagnosis was corroborated; but the victim, only lightly anesthetized, suddenly clawed wildly at her own intestines, and breathed her last. The infants lived twenty-four hours.

This death from preoperative hemorrhage and shock emphasizes a very nice point. The nearer to term an extra-uterine pregnancy goes, the more terrible is the hemorrhage, and generally fatal, because the placental site cannot be handled quickly and carefully. Again, obviously the nearer this extra-uterine placenta is to the uterine cornua, the more severe will be the bleeding.

INDICATIONS FOR AND TECHNIQUE OF CESAREAN SECTION*

HAROLD A. MILLER, M.D.

PITTSBURGH

None of you regret more than I the absence of the man who is Pennsylvania's leading teacher of obstetrics, the greatest obstetrical teacher and author and perhaps the dean of the obstetricians of America, Dr. John Cooke Hirst, who was scheduled to discuss this subject. With this apology, I am going to ask you to listen to a few remarks that I have thought of since your secretary gave me a twenty-third hour invitation.

We must remember that the primary purpose of conception is reproduction. In general, cesarean section is indicated whenever it is necessary to take a child from a pregnant woman in order to save it from death or traumatism during its passage through the birth canal. The crucial test of whether or not cesarean section has been justified is that both mother and child live and are subsequently free from the results of birth traumatism.

The selection of a case for cesarean section begins, of course, not at the time when the patient is actually in labor, but with the prenatal care. Every pregnant woman has the right to expect of her attending physician a proper examination for contracted pelvis, whether it be a contracted inlet or a contracted outlet, prior to the time when she actually goes in labor. She also has the right to expect a predetermination of the possibility of obstructions in the soft parts—fibroids of the uterus or cysts or any other obstruction.

By way of illustration, just the other day we opened an abdomen and removed two babies and seven fibroids, which was doing pretty well for one uterus. The fibroids were in the lower uterine segment, definitely obstructing the birth canal, so that this woman could not have delivered herself.

There may be some difference as to the exact size of the pelvis that will necessitate cesarean section, but there is no question that a pelvis that has a true conjugate of seven and a half centimeters or less will require a cesarean section on the patient some time before she goes in labor. It is not necessary to wait for any dilatation—this applies to both multipara and primipara—for lochia does not coagulate in the normal uterus and will drain out just as definitely as will the menstrual discharge of the nonpregnant woman.

In a case where the true conjugate is seven and a half centimeters or above, the best pelvimeter is the fetal head. If it cannot be brought to the point where it engages, the case will warrant careful supervision during the test of labor and the findings may classify it as one in which you would expect to interfere. The element of error in pelvimetry and measurement of the fetal head is always sufficient to warrant cesarean section in contradistinction to axis-traction forceps on a floating head.

If, during the test of labor, you will handle your case without vaginal examinations, if you will determine your engagement largely by abdominal palpations (in a case where you feel an internal examination is necessary, making a rectal examination in preference to the vaginal examination), cesarean section can still be done safely. If the case has been contaminated before the patient is brought to you, you can still do an extraperitoneal or a transperitoneal cesarean section. In this instance you make a very low incision, although I do not believe that actual extraperitoneal cesarean section is very frequent. However, you have decreased the traumatism by cutting through the lower part of the uterus, also the amount of the uterine wall incised, thereby decreasing the septic area and in the majority of cases avoiding the placental site. In all suspected septic cases the Fowler position used postoperatively will markedly decrease morbidity and mortality.

The two greatest advances in obstetrics that have occurred during my lifetime have been in the prenatal care of the pregnant woman and the substitution of rectal for vaginal examinations. I have working with me in my clinic at the Magee Hospital, a Russian doctor who is herself a mother. She reports that they are not using the rectal examination in either Switzerland or Russia. One of her children was delivered in this country, and she says that for primiparae the vaginal examination is very much more painful and much more uncomfortable than the rectal examination. Therefore, I commend to your earnest thought and attention the advisability of avoiding entirely any vaginal manipulation for at least three or four or preferably six weeks prior to the confinement.

There is another class of cases with which we have to deal, who have perfectly normal pelves. With the increased use of radium for the handling of fibroids, occasionally one gets a cicatricial cervix that warrants a cesarean section, thereby avoiding deep cervical lacerations. During the past year I have delivered two women who had had small applications of radium for the control of fibroids in the lower uterine segment. In both of these cases the cervix did not absorb. One case was in labor forty hours, delivering herself spontaneously by tearing the cervix. We might have done better had we primarily elected to do a cesarean section.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

Other cases that come under this group are those with premature separation of normally implanted placenta, accompanied by severe hemorrhage. There is only one way in which this hemorrhage can be stopped, and that is by emptying the uterus. In placenta prævia the central presentation without dilatation of the cervix may put the patient in the cesarean class. Frequently on rectal examination, the one edge may be felt just above the internal os. If the patient is in a hospital (and all placenta prævia cases should be taken there) and watched carefully, the placenta may separate without much hemorrhage and lie on the cervical canal, thus becoming a cervical placenta. If the attachment is marginal the patient may be delivered either by Braxton-Hicks version or by rupturing the membranes, thus using some part of the fetus as a tampon. Occasionally such a patient will be delivered without a great deal of hemorrhage.

We treat in our clinic over two thousand cases a year, and I am very happy to report that during the past eighteen months we have not had one case of eclampsia occur in a woman who has been there for prenatal care. We must all admit that eclampsia is a preventable condition and will become entirely a complication of the past, known only in textbooks, as soon as all pregnant women are given proper prenatal care. If a case develops, however, it may be that at times cesarean section is warranted if the cervix is undilated. If the patient is seen in a pre-eclamptic state or after one or two convulsions, would it not be better to promote elimination by a modified Stroganoff method, for if terminal pathology is present the obstetrical interference will not remove it. If there is no marked pathology, treatment will make a better surgical risk of the case and the cesarean section can be done after the patient has improved.

It is my belief that face presentation does not often constitute an indication for cesarean section. It may be that someone who is unfamiliar with the normal mechanism of labor would prefer to do a cesarean. In face presentations you have three etiological factors: contracted pelvis, unusually large pelvis, and cases in which something prevents the normal flexion of the head, or in which the head does not flex on account of the cord being around the neck, or because of enlarged thyroid of the fetus. Any of these cases are very much better treated by some form of version or by release of the cord than by cesarean section.

There is one definite disadvantage in performing cesarean section: once a woman has had cesarean, every following pregnancy necessitates a section. Therefore, it is not always advisable to do it on borderline cases, for it is improbable that they will want to submit to three or four cesarean sections.

DISCUSSION

ON OBSTETRICAL SYMPOSIUM

Dr. Samuel J. Waterworth (Clearfield): My remarks will have to be made, not from the point of view of an obstetrician, but from that of a general practitioner. I do not do obstetrics, but I live in a community about the size of Huntingdon, from which Dr. Brumbaugh comes, and in a general practice have some opportunities to observe the conduct of obstetrical cases.

My criticism would be that I think the average woman in a rural community does not get a square deal. She does not have the observation previous to her confinement that she should have. I see many mothers with thyroid disease, who I am quite sure could have been materially benefited had they had careful treatment for their thyroid condition. The dentists also tell us that many of these women could have had better attention paid to their teeth. I do not know much about metabolism, but it occurs to me that lime salt might be used to advantage in such cases.

Further criticisms would be that in our rural communities the art of pelvimetry is practiced only in a very crude way. The average physician does not carry aseptic technique to the bedside. His equipment usually consists of a satchel and possibly a few packages of gauze that may have been opened before. Pituitrin is used too frequently. The country doctor oftentimes will be caring for two or three cases at one time; and in the struggle to give them all attention he is often tempted to use pituitrin, and many times the forceps, unnecessarily. Afterwards, how much attention does he give to prevent retroversion? Does he prescribe for his patients physical culture exercises, calisthenics, or the knee-chest position at times? Does he examine all these patients afterwards?

I do not ask these questions from a technical standpoint, but with a desire to help the rural practitioner to overcome these defects in technique.

Dr. William N. Bradley (Philadelphia): My position is similar to that of Dr. Waterworth, but I should like to discuss these papers from the standpoint of the pediatrist. It is very delightful to come here to-day and find that after eight or ten years the pediatrician has succeeded in awakening the obstetrician to the importance of prenatal care, the benefits of which we have recognized all of these years.

As already pointed out, the greatest infant mortality occurs at the time when the obstetrician is in charge —during the first month of the child's life. As you know, infant mortality from other causes during the first year of life has been materially reduced and we are now trying to concentrate upon the obstetric mortality. I wish, therefore, to congratulate the Society on the two papers that have been read here to-day.

Some of the results of our efforts have been apparent in the record made at the Starr Center during the last four years. There have been delivered under the care of the prenatal department 457 babies who were living at one month of age. Of this number 449 were entirely breast-fed. This means that 99% of these babies were being entirely breast-fed at one month of age, which eliminates much of the mortality during the first year of life. From the standpoint of the prevention of disease, if we are going to save infant life, breast-feeding is one of the most important factors. Cases in which we have given prenatal care now number close to 1,000 and cover a period from 1914. In that time we have not had one case of eclampsia. This, I think, follows out the argument and suggestion of the last speaker.

Dr. Charles E. Thomson (Scranton): Like the last two speakers, I shall have to discuss these papers from the standpoint, not of the obstetrician, but of the surgeon, because I do not do obstetrics.

I want to take exception to Dr. Miller's remark that once a woman has been delivered by cesarean section she will always have to be delivered by this method. I do not believe that is sound reasoning. I have had many cases of cesarean section that at subsequent pregnancies were delivered normally, and in more than 100 cases I have never had a ruptured uterus.

If I understood Dr. Miller correctly, he said that patients tire of cesarean sections, and I should like to take exception to this point. I have four times performed cesarean section on one woman and three on another and I was the one who got tired—not the patients. I believe they would have been perfectly willing to continue the practice indefinitely.

Dr. J. S. Callen (Shenandoah): I have had 5,000 cases. I use pituitrin, a dangerous drug if one is not acquainted with some of the facts in connection with it and does not exercise good judgment. I prevent, as far as possible, laceration of the cervix in a primipara by giving her morphine and hyoscine hypodermically, if she has time so that the fibres will relax. I believe it is a merciful thing to put her to sleep, so that she may not anticipate the next pain and quickly forget the last. I believe that her perineum will be in better condition and her cervix not so likely to lacerate if she has had a period of rest under the narcotic.

One of the dangers of using pituitrin is that men forget that some women are especially susceptible to the effects of it and others are practically nonsusceptible. Therefore, some have thought that pituitrin is worthless and they could not get results; then they may give a large dose in the next case because they had so little result in the first. I have proved repeatedly that women differ in their susceptibility to the use of this drug. I think it is very good in its place, and I use it rather frequently but judiciously. When I pack my grip I take my conscience with me and I am as careful as I possibly can be to obtain the least harmful results. I believe in giving pituitrin only when the head is in the lower strait; and I am very careful then in giving it, especially in a primipara, because I know that additional force is liable to do irreparable damage to the perineum.

May I say that I believe in the lateral laceration or the lateral incision to prevent the median line tear? I did it ten years before it was suggested by a German obstetrician and I have done it repeatedly. I do not believe in the doing of unnecessary things, but I find that it is a very valuable procedure to prevent the linear or median line tear and the accompanying danger to the tissues.

Dr. Charles J. Cummings (Williamsport): I just wish to endorse and emphasize two statements of the last speaker in regard to the transverse slit and the administration of a sedative. The administration of a sedative I believe to be a proper routine procedure. It relieves pain and thus affords nature time, without too much distress to the mother, to perform a much needed work. Merit, too, attaches to the transverse slit. It should be taken advantage of under certain circumstances according to the operator's judgment. It greatly relieves perineal tension. It lessens and may prevent tears.

Dr. John D. Donnelly (Harrisburg): Dr. Brumbaugh and Dr. Miller have brought out very clearly the necessity for prenatal care. In most communities where the doctor is obliged to drive from five to twenty miles in heavy rain and snowstorms to visit his patients, proper prenatal care is hard to give under such circumstances. Expectant mothers living at such distances often find it impossible to visit their physician's office regularly. These mothers are entitled to prenatal care, but how many know this? Few of them know the benefits to be derived from such care. Do they know why Mrs. Jones, who had a midwife, lost her baby, because a doctor was called too late to help her? Do they know why Mrs. Smith died of convulsions, after her baby was born, which were said to have been due to Bright's disease, and how her life might have been spared had she taken advantage of prenatal care and placed herself under her doctor's supervision from the time she became pregnant?

We, as physicians, can tell our prospective mothers the value of prenatal care. We can show them that prenatal care is really life insurance and that it not only pays when estimated in dollars and cents, but helps render two precious lives safe. When we unite as a body and spread this gospel of prenatal care to all mothers, every woman in Pennsylvania will seek and receive it. Help speed up the awakening to the necessity of prenatal care by talking it up in your medical societies, among your patients, and by writing up and presenting your experiences as Dr. Brumbaugh and Dr. Miller have so ably done.

You have already heard some of the things which the Pennsylvania State Department of Health is doing to encourage and help this great work in rural districts. There are a hundred state nurses in the field who are being fully equipped to do prenatal and postnatal follow-up work. These nurses will be supplied, among other things, with blood pressure apparatus and a portable urinalysis set which they have been trained to use. They will call upon the doctors with a card upon which will be two questions:

1. Do you wish the nurse to call on all your pregnant patients?

2. Do you wish the nurse to call only on those pregnant patients whom you may specify?

The nurse will only follow out the doctor's instructions among his patients and, from time to time, report their progress and see that the women visit the doctor when he requests them to. In this way she can keep in touch with patients who are miles from town. Every effort will be made to get women to see their doctor early for complete examination, which only a physician can make, and register with him for prenatal care and delivery.

As to the women who will not have doctors and insist upon having midwives, the nurse will do similar work, together with supervising the work of the midwives.

Gentlemen, the rural doctors feel that this is an excellent program and one well worth trying. We hope when you return to your counties you will make use of the services of these nurses.

Dr. Lawrence Litchfield (Pittsburgh): In spite of the lateness of the hour, I want to give myself two minutes on this discussion. I intimated yesterday that education would save more lives than medicine or surgery put together. We hear a great deal about prenatal care in a general way—about diet during pregnancy. The principal item in prenatal care is diet; and when you mention prenatal care it doesn't take a minute to say that the pregnant woman should not live on cereals, white bread, substitutes for butter which have no vitamines, muscle meat and tubers, but that she should live on milk and leafy vegetables, visceral meats and real butter. I think the State Health Department should circularize every woman who takes out a marriage certificate with the fundamental principles of prenatal care. That is perfectly possible and practicable.

Dr. Brumbaugh (in closing): The sole reason for this rather obvious paper of mine was the firm conviction that the mothers of our state are not getting the care and attention that they are entitled to, and that if we as a profession do not, of our own initiative, give them better care, it will not be long until they will begin to criticize us for our lack of appreciation of their needs.

Dr. Miller has said that eclampsia is a preventable disease. I entirely agree with him in that; but the fact remains that patients do continue to have eclampsia because they do not receive the prenatal care that they are entitled to. I am not quite so optimistic as Dr. Miller in the belief that eclampsia will soon be entirely eradicated.

Dr. Miller (in closing): I fully endorse what Dr. Litchfield has said; he is absolutely correct about the diet of the pregnant woman.

I believe there are times when a woman who has had a cesarean section will in a subsequent labor deliver spontaneously; but within my hearing in this room to-day is a physician who referred to me a woman who had previously had a cesarean section, and she ruptured her uterus before she was definitely in labor.

Thyrotoxicosis is a problem for the internist. If the case is under the care of a competent internist during pregnancy, she very likely will go through without difficulty.

Every physician unconsciously practices pelvimetry. Prior to the time of labor, if the head cannot be made to engage, some obstruction or disproportion should be looked for, particularly in primipara or in a woman giving the history of a stillborn child as a result of difficult labor. Forceps should never be applied to a floating head. Sixteen per cent of those who have contracted pelves have contracted outlets, so the head may engage and be obstructed at outlet. This fact must be considered in deciding whether or not a cesarean section is indicated.

Pituitrin is the most pernicious drug in the pharmacopeia. It should never be used in labor. The drug itself is unstable and individuals react to it differently, so that it can never be depended upon. If used in the first stage of labor the increased contractions cause lacerations of the cervix; in the second stage, second or third degree lacerations of the perineum. The violent uterine contractions may tear the placenta from its attachment so that pieces may be retained and cause sepsis, or they may cause premature separation of normally implanted placenta. It is also dangerous for the child, causing asphyxia pallida due to lessened blood supply, or it may cause intracranial hemorrhage.

In our teaching institutions there was a time when students did not deliver a single case. Last year the average number of cases delivered by the students at the Elizabeth Steel Magee Hospital was thirty-five. The maximum number was fifty and the minimum number thirty. If these students are not prepared after having had actual charge of thirty deliveries, besides the additional training during their internship, it is absolutely impossible to make proper obstetricians.

I think highly of Dr. Bardley's teaching and I quite agree with him that the health of the future generations of this world depends upon the care given the woman during her pregnancy. If she is properly looked after, difficult labor can be anticipated and very largely avoided.

Morphine after labor is established is of great benefit to many pregnant women. It does not delay or retard absorption and dilatation of the cervix. Take a series of cases of women without morphine and women given ¼ grain of morphine, and the latter will deliver themselves just as quickly and with very much less injury and a decreased number of cervical tears.

Episiotomy to avoid a tear is a particularly excellent thing. It gives a clean cut without the irregularities of tears, so admitting better approximation and giving a higher percentage of union. If union does not take place the pelvic floor is not destroyed to the same extent as with a second degree tear.

Dr. Janvier (in closing): I wish first to express my keen disappointment in not having the opportunity of reading my own paper to-day. In the light of the lateness of the hour, I did not think it would be received with much enjoyment. Hence my request to be allowed only a few words in closing the discussion.

I wish to ask you gentlemen to-day, how many of you receive a decent obstetric fee? Very few, I am sure! Is it because a woman cannot pay fifty dollars to be confined? Most emphatically *no* in nine cases out of ten! It is simply because of the fact that for a hundred years back, the physician has been looked upon simply as a male midwife and not as an obstetrician.

I have cut down my own obstetric work fifty per cent the last five years, because I have raised my fee to an amount in keeping with my experience and with services rendered. I charge a nominal prenatal fee for office consultations and laboratory work, which is slowly coming to be appreciated and demanded. It has been hard to go through this process after eleven years of conscientious work in obstetrics, but I am slowly coming out of the valley of discouragement. Even my foreign clientage are returning and I am gradually getting new work among that class. I find it almost as easy among these people to get fifty dollars as I did twenty-five.

There are two things brought out in my unread paper, about which nothing has been said: breech presentation in elderly primiparæ, and posterior chin in face presentation.

Most primiparæ around forty, have a large overgrown baby with immense head. Breech or head presentation give an alarming maternal morbidity and fetal mortality. Breech presentation actually demands cesarean section before labor starts, in these elderly primiparæ. Therefore, I advocate routine cesarean.

Posterior chin in any woman demands judgment, care and skill. Here the common custom is to put on forceps and tear out the muscles, nerves and other structures in the baby's neck. I lay special emphasis on this complication to my students at the Southeastern Dispensary and tell them never to use forceps as a primary tractor, but to convert the posterior chin into an anterior chin by rotation, reapplying the forceps and delivering as an anterior chin. I also emphasize a lateral episiotomy here, as a routine procedure to avoid a complete tear.

Nine out of ten men doing obstetrics to-day, are guilty of inexcusably dirty technique. No woman should be examined in labor until after the operator's hands are sterilized and gloved and the woman's introitus thoroughly antisepticized. Here is where most men fail, even though the whole procedure need not take ten minutes' more time. I can safely say that not one out of ten takes this simple precaution before examining the patient.

I wish to take issue with my respected colleague from Pittsburgh. Potter is *not* getting more fetal mortality than any man in the country, and those who are doing version his way are not getting more fetal mortality. Dr. Norman L. Knipe, of Philadelphia, is soon to report a series of one hundred and five cases, delivered by his technique, with not a single fetal mortality. The average man has neither the material nor the time to gain skill in this operation. But why should it be condemned on this account. Let those who do this successfully be commended and not condemned from jealousy.

Rectal examinations in labor have been mentioned to-day. Let me say that it has taken me six years to educate my tactile sense so that now it gives me an accurate diagnosis by rectal examination. It is a difficult thing for the man of small experience.

I am sorry I could not read my paper to-day, as I said, but I realized you were all mentally fatigued with the length of the program and the endless discussions on the papers already presented.

REPORT OF A CASE OF EPIDURAL ABSCESS OF THE SPINAL CANAL*

EDGAR M. GREEN, M.D., Sc.D.

EASTON

Paraplegia in an adult may be produced by a variety of causes. Frequently the cause is difficult to ascertain. The following notes of a case seen by me a year ago may be of some interest:

A man, aged 23, a farmer, was admitted to the Easton Hospital on September 7, 1921. He had been in the United States Army in France and had no disease or accident while in the service. About one week before his admission to the hospital, he complained of pain in the left side of the chest and extending below the ribs. On Monday, September 5th, he found that he could not move his legs freely nor was he able to pass urine. There was a general loss of motion and sensation. He states that one week before he was taken sick, while working in the field, he became overheated and sponged his body with very cold spring water. The parts of his body that were bathed corresponded very closely to the parts now affected. Examination showed a large denuded area in the anterior portion of the left chest extending from the sixth interspace, 4 inches downward. The man was entirely unable to move his lower extremities. Sensation was lost from the anterior portion of leg and thigh and as high as the fifth interspace on the right side. On the left side sensation was lost from the corresponding area as high as the sixth interspace. Temperature on admission was 99 3/5°, pulse 72, respiration 16. Patellar reflex was absent. No ankleclonus, no Babinsky, cremasteric reflex absent, abdominal reflex absent, bicipital reflex absent. He denied any venereal history or alcoholic history. Pupillary reflexes normal. Heart normal; no evidence of pulmonary disease. There was no history of injury to the head or spinal column.

Urinary examination resulted as follows:

Color	Red
Reaction	Acid
Sediment	No
Urea	Not estimated
Indican	Red (strong)
Albumin	+
Acetone	None
Odor	Urinous
Clearness	Cloudy
Sp. Gr.	1.030
Total solids	69.90 per mill.
Uric acid	Not estimated
Bile	No
Sugar	No
Diacetic acid	None

MICROSCOPIC EXAMINATION

Mucus and few pus cells.

Blood	No
Spermatozoids	None
Epithelium,	Few squamous
Tube casts	Occ. (small) hyaline
Remarks	Oil droplets

Blood examination was as follows:

Haem	90
Reds	4,620,000
Whites	18,800

DIFFERENTIAL

Polymorph	79
Large mono	12
Small mono	6
Transitional	3
	100

Wassermann test on the blood was +++. Wassermann test on the spinal fluid negative. No organism was found in the spinal fluid. A second examination of the spinal fluid was made on the 13th, six days after admission. It resulted as follows: Fluid clear golden· in color. No organism found. Cell count normal. No reduction to Fehling. Cloudy on boiling. The patient continued to lose ground and the temperature varied, finally rising to 105° before death, which occurred on September 18th.

Before giving you a report of the results of the autopsy I should like to discuss for a few moments in a general way the focal transverse lesions of the spinal cord. It is frequently difficult to make an accurate diagnosis of such lesions. Dr. James B. Ayer, of the Harvard Medical School, a few years ago wrote a very interesting paper on this subject. He prefers the term "focal transverse lesion of the spinal cord" rather than "transverse myelitis," for the reason that the term myelitis denotes inflammation and many of the lesions which occur are noninflammatory. For instance, there may be tumors, hemorrhages and fractures. Frequently a transverse lesion, if not coming on too suddenly, will show, upon examination, a tumor pressing upon the middorsal cord. There will be ataxia and spasticity of legs with diminished sensibility up to the affected level. Dr. Ayer gives the following list which I think contains all the common types of focal cord disorders and also some of the unusual ones:

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

Intramedullary Affections:
- Hemorrhage.
- Myelitis, infectious or toxic.
- "Myelitis," vascular thrombotic.
- Tumor glioma.
- Syringomyelia (gliosis spinalis).
- Dermoid cysts and growths from ependyma of central canal.
- Solitary tubercle.

Meningeal:
- Chronic meningitis (more often meningomyelitis) syphilitic, cervical, hyperplastic (syphilitic).
- Varicose veins.
- Tumor:
  - Fibroma.
  - Glioma by extension from brain.

Extrameningeal:
- Disease of vertebræ:
  - Tuberculosis.
  - Tumor, especially myeloma.
    - Metastatic.
  - Osteomyelitis with epidural abscess.
  - Charcot spine.
- Fracture of vertebræ.
- Dislocation of vertebræ.
- Abscess—epidural—not from vertebræ.
- Aneurysm, eroding.

In further discussing the diagnosis of these cases I should like to say that a leucocytosis, of course, would suggest infection and might in certain cases lead to the location of an abscess. In the same way anemia, if present, may be detected, and therefore, in a questionable case place the evidence in favor of a systemic disease. In this case you will remember that there was a positive Wassermann shown in examination of the blood. It is not correct, however, to assert that because the patient has spinal trouble and also a positive Wassermann, that therefore there is syphilis of the spinal cord. An x-ray was also taken in this case and nothing of diagnostic value found. By far the most important examination made was that of the spinal fluid. You will remember that the fluid was of a clear golden color containing no organism. The cell count was normal, but it did contain a considerable amount of albumin. Moreover, it should be added that the fluid came from the spinal canal under low pressure. These characteristics of the spinal fluid practically make up what is commonly spoken of as the "syndrome of Froin." This syndrome is defined as "massive coagulation and xanthochromia." The low pressure of the spinal fluid is caused by compression of the spinal canal above the point of tapping. Spinal fluid pressure is thereby increased above and decreased below the compression. Transudation into the lower area then takes place from the dilated veins and you have a high albumin content. Ayer gives an interesting statement of the variations of this syndrome, as follows:

"As variations of this 'syndrome of Froin' we find at times that there is an increase of inflammatory cells, usually lymphocytes, signifying that besides the compression there is inflammation present. At other times the pressure is not low. But the most important variation gives us a fluid which superficially seems to have no relation to the 'complete syndrome' as given. Where presumably the pressure upon the cord has been insufficient to shut off the spinal fluid column, we find a fluid of normal appearance, colorless, under normal pressure, but one which contains an abundance of albumin. This fluid does not clot, it may or may not contain cells. Such a fluid falls into the group of 'Nonne's incomplete syndrome.' The significance of both fluids is the same, i. e., compression of the cord.

"Unfortunately, the spinal fluid findings do not tell us where or what the lesion is; though it is noticeable that the more complete the compression and the more rapidly it has been produced, and also the further down the cord the compression exists in these cases, the more likely is the complete syndrome to occur.

"Unfortunately, also, the findings are not always characteristic of cord compression where such exists; but the existence of the incomplete syndrome is evidence in favor of it. The presence of the complete syndrome is perhaps as nearly pathognomonic as any single sign in medicine."

Inasmuch as this "syndrome of Froin" was present in the case which I have recounted, it was decided by us that the paraplegia was caused by pressure upon the spinal cord probably due to an abscess, and it was not due to an inflammatory condition primarily; in other words, not myelitis. From this standpoint a short report of the autopsy will be interesting.

Postmortem showed caries of the fifth rib posteriorly about five inches from the spinal column. From this point there was a tract leading direct to the pleura, with adhesions of the pleural surfaces. Another tract extended along the fifth rib to the spinal column and entered the spinal canal through the intervertebral substance of the fifth and sixth ribs, forming a walled off accumulation of pus around the cord and its membranes extending from the fifth dorsal to the cervical vertebræ and causing compression of the cord. The cord itself appeared normal in every respect.

Singularly enough Dr. Ayer, in a lecture delivered about four years ago, reports a case which is similar in its anatomical conditions:

"O. J., forty-three years of age on August 20, 1915, while roofing a house, scratched his right breast on a nail. From this an abscess developed and on September 3d broke, yielding subsequently to surgical treatment. About September 11th, however, the patient complained of "pleurisy pains" in left back and later also in left lower chest, which persisted, accompanied by a temperature of 102 to 104° F. On September 26th he could not pass urine for the first time, and complained of pains in legs as well as back. His back was rigid and tender over the seventh and eighth dorsal spines. The next day he had difficulty moving his legs, and by September 29th he was paraplegic, with urinary and fecal incontinence. Neurologic examination showed, besides the almost complete paralysis of legs, a mild bilateral sensory disturbance below umbilicus, knee-jerk present, ankle-jerk not obtained, plantars normal, abdominal and cremasteric reflexes absent. Head and arms not remarkable. Examination of the back showed some fulness only in dorsal region and crackling râles at bases of lungs. Lumbar puncture gave 4 c.c. only, of clear yellow fluid, under no excess of pressure, the fluid clotting almost immediately. In twelve hours the fluid separated spontaneously from the clot and was found to give a negative Wassermann, a gold sol. in the 'meningitis' zone, great excess of proteins, and to be sterile on culture. The clot was macerated and examined for cells, one only being found. In seven days the patient died."

Abstract of Autopsy (five hours' postmortem): Just to the right and below the right nipple is an area, 10 cm. in diameter, of granulation tissue. From it no pus can be expressed, nor is there any in the surrounding tissue. The first incision into the back, however, yields a thick greenish pus. Investigating deeper and more extensively shows that this pus has infiltrated the trapezius, latissimus dorsi, and erector spinæ groups of muscles. Dissecting to the spinal column, pus is seen to well up between the vertebræ and when the laminæ and spines have been removed, a thick coating of pus hides the dura from view for a distance of 10 cm. corresponding to the fifth, sixth and seventh dorsal vertebræ. The pus is easily stripped from its position on dura and from the nerve roots which it surrounds, leaving the former perfectly normal in appearance. The dura opened reveals a glistening inner surface and a cord of normal appearance, but the spinal fluid in the lumbar sac is of yellow color and, as analysis shows, is similar to that withdrawn previously. Even on section the cord presents everywhere a normal appearance and markings.

It seems to me that there are two or three lessons to be learned from these cases:

First: The fact that an x-ray picture is not always a great help in cases of paraplegia.

Second: The importance of a careful examination of the spinal fluid which often will give a strong clue as to the real diagnosis.

Third: If the "Froin syndrome" is present, it is as pathognomonic a sign as perhaps many that occur in medical practice. Even if incomplete it is at least suggestive of compression of the cord.

Fourth: The presence of paraplegia and an accompanying positive Wassermann does not necessarily prove that there is syphilitic disease of the spinal cord.

DISCUSSION

Dr. Nathaniel W. Winkelman (Philadelphia): Dr. Green's paper on paraplegia brings up two questions of utmost importance: first, where is the lesion? and second, what is the lesion? The treatment that we give these patients depends on the answer to these two questions.

Lesions of the spinal cord may be intra- or extramedullary. A rule of thumb that we can follow is that extramedullary lesions, aside from hemorrhage, usually come on slowly with one symptom that is very characteristic—pain; while intramedullary lesions for the most part produce no pain. For an extramedullary lesion to come on suddenly with pain as a minor symptom is unusual and that is what makes this report of Dr. Green's so interesting.

Again, as a general rule, a lesion of the cord that is not complete produces spasticity and all the other signs of an upper motor neurone lesion. I say, as a general rule, because cases similar to the one described this afternoon have been reported. What is the explanation of a case of this sort, where there were all the evidences of a complete transverse lesion and yet grossly the cord was normal? First of all I do not believe the spinal cord was normal, for I feel that had that cord been examined microscopically, definite evidences of degeneration would have been obtained with the Marchi stain or with an axis cylinder stain such as the Alzheimer-Mann. Still I do not believe that the lesion was a total one. I feel the fact that the symptoms came on so rapidly had something to do with the flaccidity, in the same way that at the onset of a hemiplegia there is a period when there is a flaccidity with absent reflexes.

I take issue with Dr. Green in his statement that the examination of the blood excludes an anemia of the cord. I feel that we can diagnose a posterolateral sclerosis due to an anemia before the blood findings are present. The symptoms are so characteristic that one cannot mistake them.

I would add but one other fact. In any case, with the findings enumerated by Dr. Green, I should certainly be in favor of an exploratory laminectomy. I believe in exploratory operations on the spinal cord, and I would carry out the idea that Selling of Portland, Oregon, is using: the injection of a dye into the spinal canal at the time of the operation, which stops at the level of the tumor and easily outlines the tumor at the time when the canal is opened.

Dr. Green (in closing): I would like to say a word. Unfortunately at the time this man died I was not available and our pathologist was out of town, and consequently the autopsy was made by one of my younger assistants. It was not made completely as it should have been. I told him that he should have taken that cord and had some microscopic slides made of it. I could not say the cord was normal but it appeared to be normal from the macroscopic examination.

FAULTY POSTURE AS A CAUSE OF OBSCURE DIGESTIVE AND NUTRITIONAL DISORDERS; REPORT OF TREATMENT IN FIFTY CASES*

PERCIVAL NICHOLSON, M.D.

ARDMORE

Owing to poor bodily mechanics, many of the recruits in the late World War were placed on the disabled list, with backache, general fatigue, legache, weak feet, etc. In fact, a little less than one-half of all the new troops were so incapacitated.

In studying the problem in adults it became at once evident that much better, more lasting and more easily accomplished results could be obtained by proper management and correction during childhood.

The first essential in attacking the problem in children is to have a clear understanding as to what constitutes normal and also abnormal posture.

A child should have the entire body in a state of equilibrium, and to produce this perfect muscle balance, as Dr. F. D. Dickson[1] well expresses it, "He should hold the head erect and directly over the chest, and hold the chest up in a forward position. The scapulae should lie fairly flat against the chest and the shoulders be held back, without muscular strain. The spinal curves should be slightly convex backward in the dorsal region and convex forward in the lumbar region. The abdomen should be flattened and held up and in by the muscles. All the muscles of the neck, chest, back, shoulders and abdomen should be in slight contraction without strain or effort."

Cases of abnormal posture, on the other hand, show, in varying degree, the following: The chest flattened, with diminished anteroposterior diameters; the ribs approximated; the shoulders rounded and the scapulae alar. The back has an exaggeration of the normal curves, and the abdomen relaxed, owing to weak muscles, protruding markedly, especially below the umbilicus. The pelvis is tilted down and forward, and in many cases the knees are slightly flexed, as a compensatory measure.

When attention is especially centered on faulty posture, one finds in a hospital clinic a very large number of children with incorrect bodily mechanics. The same condition prevails among our well-to-do patients.

As a result of faulty posture, with diminished air capacity in the chest, there is poor oxidization of the blood. The flaccid diaphram drops down, and the weak abdominal muscles and the anterior curvature of the back in the lumbar region allow the abdominal viscera to slide forward and down, with resulting drag on the mensentery, blood vessels and ligaments, with a general visceroptosis resulting in a disturbance of digestion, producing secondary malnutrition. The child only maintains the upright posture with great muscular effort, and is in a state of constant muscular and nervous strain.

The causes of faulty posture fall in two large groups: (a) Congenital; (b) Acquired.

(a) In the congenital class are all the cases of malformation and also a goodly number of children of long, slender build. They have congenitally poor bodily mechanics, which do not necessarily cause, but certainly predispose to, poor posture.

(b) In the group of acquired poor posture are many cases of difficult feeding during infancy and early childhood, infants whose powers of digestion were poor or whose feeding management was not what it should have been. These are cases of malnutrition, through whose muscular weakness flat chest, curved back, relaxed abdomen, etc., develop. They make up a large proportion of the children with faulty posture. Often the amount of deformity is moderate, but usually these cases are brought to the physician for very definite symptoms.

Another class includes Pott's disease, tuberculous hip and rachitic deformities, knock knees, bow legs, etc.

A third class consists of children who have not had a balanced diet from infancy on.

In a fourth group are children who have had some severe illness and, before they have recovered their tone, have been put back on their regular diet and allowed to pursue their regular occupations while their muscles were still weakened.

The symptoms found vary according to the character and extent of the postural defect and the length of time the condition has been present. These children tire easily, are soon exhausted and usually appear pale and have deep circles under the eyes. The mother states that her child does not play like other children but wants to sit or lie down frequently, and comes home from school exhausted. His appetite is poor, sleep restless, and when he gets up in the morning he is tired. He is irritable and a veritable tease; always nervous and cranky, and the school teacher complains of his inattention and lack of concentration in his studies. He is earmarked as inferior or dull in his school work.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

In addition, such a child often has leg, knee or foot ache. These cases are often overlooked because they are always below par, no especially sudden or unusual symptoms developing. They, however, are always under-nourished and frequently anemic in appearance. Some cases, owing to ptosed stomach, fail in emptying it properly, and vomiting ensues, cyclic in type. This condition is clearly shown by Drs. Talbot and Brown,[2] and also Kerley.[3]

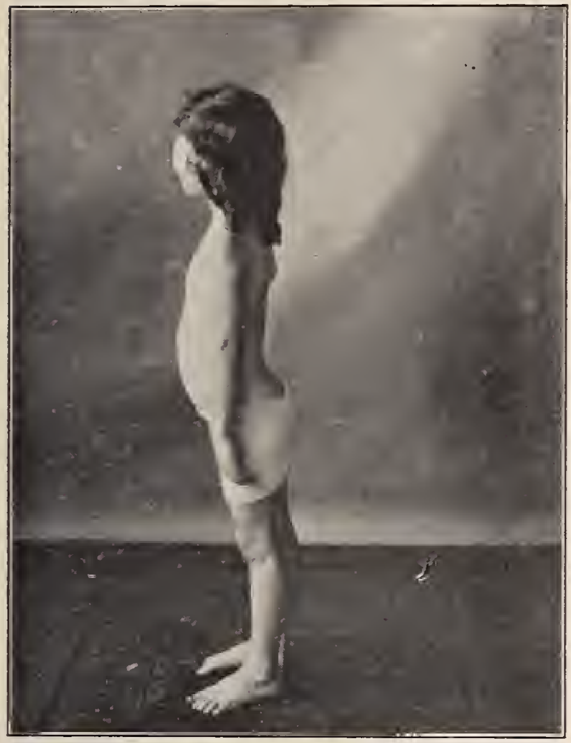

Figure 1.

Owing to the drag on the duodenum and common bile duct, they have a diminished flow of bile and a lowered tolerance for fat. The lax abdominal muscles inevitably lead to marked constipation, with or without pain, and mild or severe intestinal indigestion. These children are so pale they are often brought for treatment for anemia. Their weight increases insufficiently, is stationary, or may be actually lowered.

All the above symptoms are a result of a functional derangement due to incorrect bodily mechanics. As Dr. C. G. Kerley[4] states: "We have learned a great deal through our roentgen ray studies. First, we have learned that there may be persistent gastro-intestinal derangements affecting the immediate and after life of the patient, dependent entirely on mechanical agencies." Some of these cases, if uncorrected, in childhood or adult life, show definite effort syndrome, so well described by Dr. Kerley.[5]

The cases I wish to report are taken from my private records; some fifty in all, ages ranging from two and three-quarter years to fourteen years. They were brought for some or all of the above mentioned symptoms, but in no case had the parent considered incorrect posture as a possible cause.

The symptoms for which the children were brought, in the order of their frequency, were: nervousness and irritability, malnutrition, poor appetite, constipation and symptoms of gastric and intestinal indigestion, as pain, gas, coated tongue, circles under the eyes, cyclic vomiting, pallor and constant fatigue. A reference to a few of the case histories will make the whole subject clearer.

Case 1.—Barbara C. C., female, aged 4 years. First seen September 22, 1921. Brought on account of very capricious appetite, poor sleep, chronic constipation, constant fatigue, nervousness, irritability, failure to gain in weight, and periodic attacks of diarrhea and vomiting. After her first year she had failed to gain normally and was constipated. Had been given repeated doses of castor oil for constipation.

Examination: Child very pale, though fairly well nourished. Markedly constipated. Rest of examination negative except for poor posture.

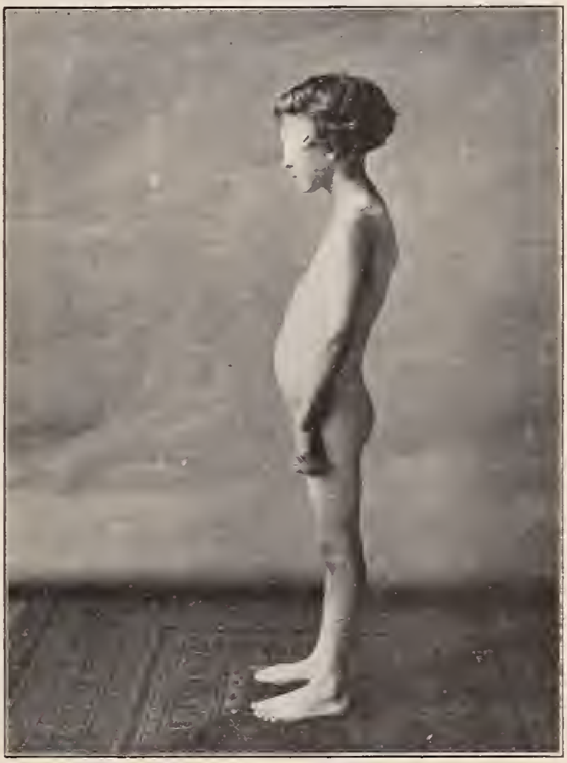

Figure 2.

A letter from her parents, in September, 1922, states that she gained three and one-quarter pounds during the year, in spite of a severe attack of pertussis in February. Her appetite is excellent, color good, and she sleeps ten hours at night and rests one and a half hours during day. Bowels are regular without medicine. Does not tire and is no longer irritable. She walks two to two and a half miles daily. Support gradually discontinued in July.

Comment: Child had severe constipation, unrelieved by medicine and diet, and was developing recurrent vomiting. Her anorexia and fatigue were marked. All her symptoms were relieved by rest periods, an abdominal support and a few minor changes in diet. This case also shows that the improved condition continues after abdominal support is removed.

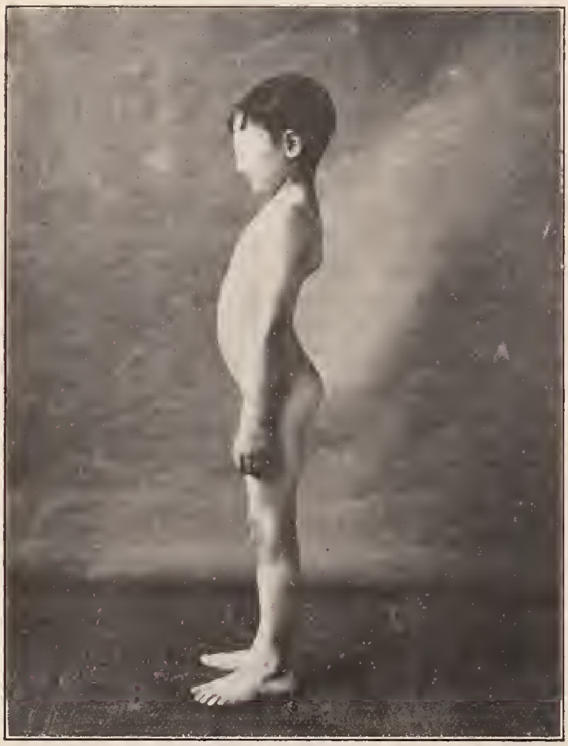

Figure 3.

Case 2.—Edward F., aged 3½ years. First seen September 1, 1921. Was a difficult feeding case during the first year. His condition was good, except for a large abdomen, until January, 1921, when he had an attack of severe vomiting, lasting ten days. Three similar attacks were seen by two pediatrists, who made a diagnosis of "acidosis," and on account of extreme pallor, ordered arsenic and iron.

September 1, 1921: Examination showed a very pale child of fair nutrition but of poor muscle tone. He was very nervous, irritable, had a very poor appetite, and was restless in his sleep. Mother said he complained of occasional pain in the abdomen and often vomited small amounts. He had deep, dark circles under the eyes, and had a very marked anterior curvature in the lumbar region, and a very large pendulous abdomen, especially below the umbilicus. His posture was much more marked than Case 1. Hemoglobin was 85%, Sahli. Weight was 27 pounds. General muscle tone very poor. Bowels constipated. Movements large formed and light clay color.

September 10, 1921: Rest periods after meals were ordered, an abdominal pad and back support applied, and all medication discontinued.

October 1, 1921: Bowels were regular and of good color, the appetite was excellent, and his color high, with rosy cheeks. Mother stated child was happy, did not tire, slept well and irritability was gone. He now weighed 33 pounds, a gain of six pounds in twenty days.

December 6, 1921: Family moved to New York, and on the way part of the support was broken, so discontinued its use. Two weeks later child had severe causeless attack of vomiting and diarrhea, temperature 103°F., lasting seven days. Child lost four pounds during attack. He was ordered arsenic and iron by another physician, but mother had support repaired and did not give medicine.

April 6, 1921: Child has good color; bowels normal. He runs around all day without tiring. Abdomen much smaller. He now weighs 35 pounds.

Comment: Abdominal support and rest periods relieved all the symptoms, including extreme pallor, mistaken for anemia. The weight increased rapidly and bile returned in the bowel movements. Too early a removal of support caused a return of symptoms but was promptly relieved when support was reapplied. Antecedent history of difficult feeding in the first year is interesting as a possible causative agent.

Case 3.—Elizabeth T. First seen September 18, 1920, when she was twenty-two months old. From a year of age, at intervals of from two to four weeks, she had attacks of vomiting associated with temperature. There was a remission of six months until September 11, 1920, when attacks began again. Was given medication and diet regulated.

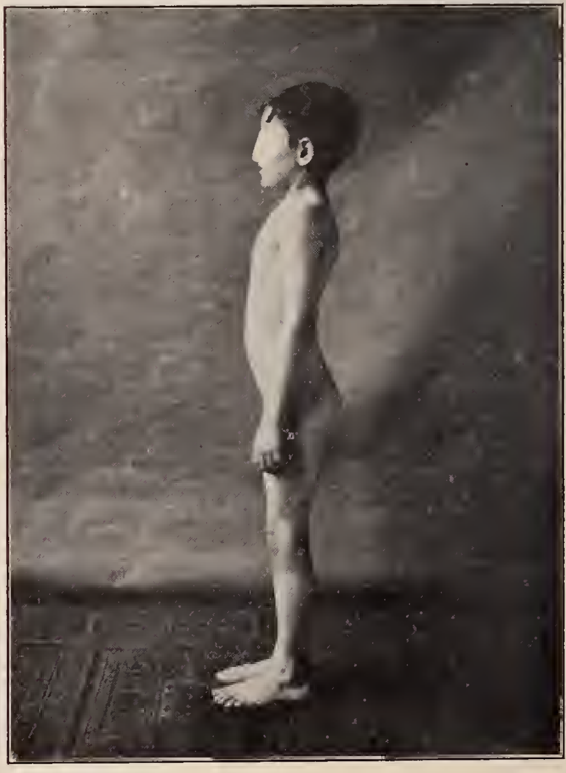

Figure 4.

July 25, 1921: Child had poor appetite, was irritable, tired on slight exertion, sleep restless, and bowel movements contained considerable mucus. Figure 1 shows poor posture. Note enlarged abdomen and anterior curve in the lumbar region. Rest periods and an abdominal support were ordered.

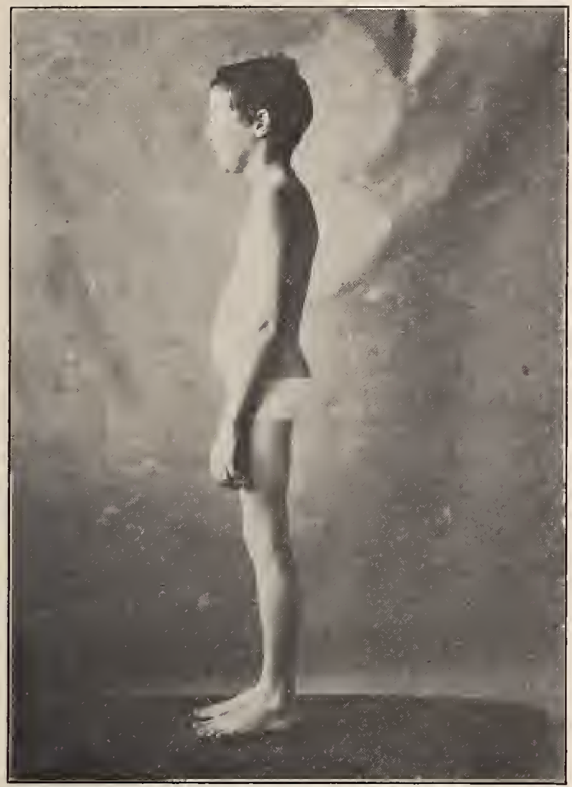

Figure 5.

December 8, 1921: Child picture of health; no vomiting attacks, temperature or diarrhea since support had been applied. Bowels moved normally, the appetite was good and sleep normal. She weighed 35 pounds, 2 ounces—a gain of 2 pounds and 2 ounces in three months.

September 13, 1922: No vomiting attacks, no nervousness, normal bowel movements, and weight 37½ pounds.

Case 4.—Harry G. U., Jr. Premature, 3 pounds 11 ounces. Difficult feeding case, always nervous, slept poorly, gained slowly, and had numerous gastro-intestinal upsets, characterized by diarrhea and vomiting. Brought for treatment September 12, 1921, aged 3½ years. He was very pale, not gaining, and had a very poor appetite. He was very irritable, slept poorly, and wanted to lie down frequently during day. He had marked mechanical defect of posture, and musculation was poor.

Rest periods were ordered and an abdominal support applied. Weight 29¾ pounds. In one month bowels were regular, sleep was normal, skin clear and of high color, nervousness and fatigue gone.

September 17, 1922: Child now in good health and weighs 36¼ pounds, a gain of 6½ pounds in a year.

Comment: Child shows effect of prematurity and difficult feeding, relieved by rest and abdominal support. This child did not have strong enough muscles to take exercise but can now, owing to improved muscle tone.

Case 5.—David P. First seen September 20, 1921, aged 7 years. Brought on account of undernourishment, nervousness and fatigue, with deep circles under the eyes and marked pallor. He weighed 53½ pounds. Postural defect was marked and was moderately constipated. He was ordered rest and an abdominal support.

September 7, 1922: Weight 64 pounds. Mother says: "Seems like different child." Bowels regular, skin clear and good color, appetite good and no fatigue.

Comment: Child gained 10½ pounds in a little less than a year, and there was marked improvement in posture and all nervousness and fatigue relieved.

Case 6.—Lilly D. Girl of 14 years. Weight 103½ pounds on March 1, 1922. Four years ago had asthma, relieved by a change in diet. Complaint: underweight and tired easily, and at school lacked concentration. At present constipated and has great difficulty in sleeping. Examination reveals very poor posture, round shoulders, neck thrown forward, chest flat, and markedly protruding abdomen. Rest periods, exercise and abdominal support.

September 7, 1922: Now the picture of health. Color high and weighs 110¾ pounds, a gain of 7¼ pounds in four months. Her constipation is entirely relieved without drugs, and her sleep normal. Now does not tire easily.

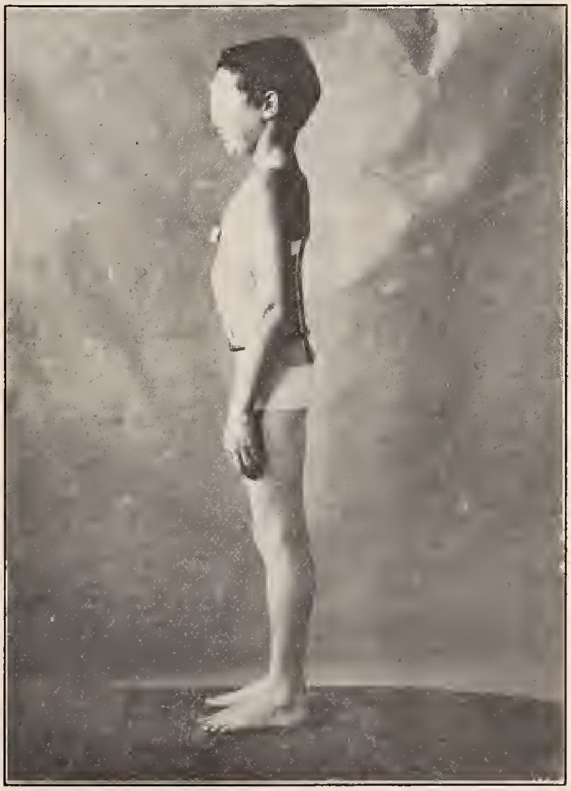

Figure 6.

September 27, 1922: Weight 112 pounds 2 ounces.

Case 7.—Margery W. First seen June 30, 1921, aged 4 years. Was high forceps case, cyanotic at birth, six and a half pounds. Difficult feeding case during first year. Now weighs 34 pounds 6 ounces. She is tired all the time and has had frequent attacks of vomiting. Figure 2 gives a good idea of her extreme posture defect. She had had rest periods after meals and wore an abdominal support until April 1922. Her symptoms had entirely cleared up, and her condition was normal. As the support seemed a little small, and on the advice of a physician who was visiting the mother, the support was removed.

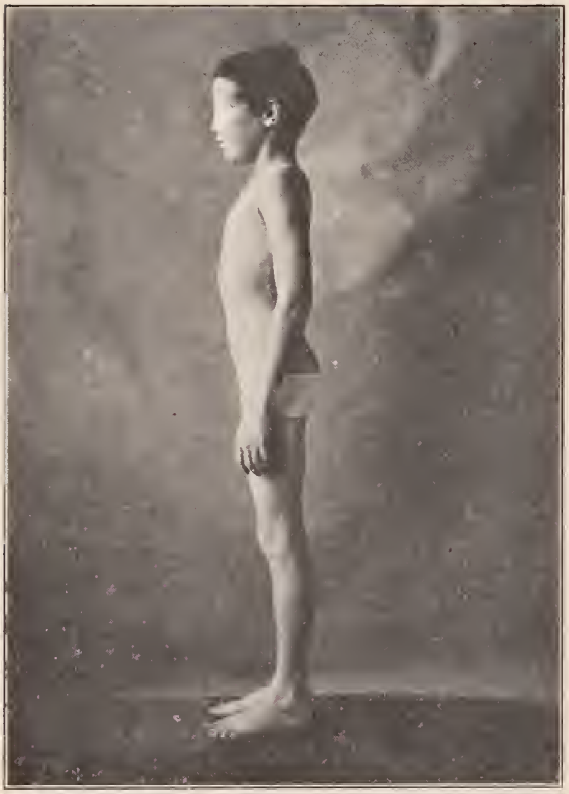

Figure 7.

May 1, 1922: Child became irritable again and mother had her given osteopathic treatments, but her condition became worse. Child became very nervous, and in ten days had an attack of vomiting, which continued at intervals until September 8. 1922, when I saw her the second time and new support was applied.

September 26, 1922: Child picture of health, appetite good, sleep normal. Taking rest period after lunch only. Rest increased. Has gained 3 pounds in eighteen days. Still little nervous. Marked improvement in child's posture.

Comment: This case shows improvement under rest and support, with return of symptoms when support was ill advisedly removed. Later return to normal with application of support.

Case 8.—Harry C. B., Jr., 7 years. Brought March 22, 1922, on account of recurrent vomiting, pallor, undernourishment and frequent colicy pains in the abdomen. Child very nervous and tired all the time. He had been subject to attacks of recurrent vomiting at intervals of about three weeks and lasting one to two days. Figure 3 gives a good idea of his poor bodily mechanics.

September 8, 1922: Color good, plays all day without fatigue or nervousness. His sleep is splendid and appetite good. No longer complains of abdominal pains. Mother says: "He is a different child." He weighs 51½ pounds, a 10 pound gain in five and a half months. Figure 4 shows the improvement when the child was given correct postural position.

Case 9.—Charles S., Jr., aged 6 years. Brought November 20, 1921. Was a seven-months' baby, weight 2½ pounds. Always delicate, with frequently recurring colds and very little endurance. October 10, 1921, tonsils and adenoids had been removed. Mother said child was irritable and nervous, sleep disturbed, always pale, had rings under the eyes, and a very poor appetite. He wanted to lie down frequently during the day.

Examination: Showed a child of poor muscle tone and marked pallor. General examination negative except for faulty posture. He had an enormous abdomen, marked anterior curve in the lumbar region, and flat chest. He weighed 36 pounds. He was ordered change in diet, rest periods after meals, postural exercise, and an abdominal support.

September 3, 1922: He improved steadily, appetite good, plays all day without tiring, sleep restful, and weighs 45¼ pounds—a gain of 9¼ pounds in ten months.

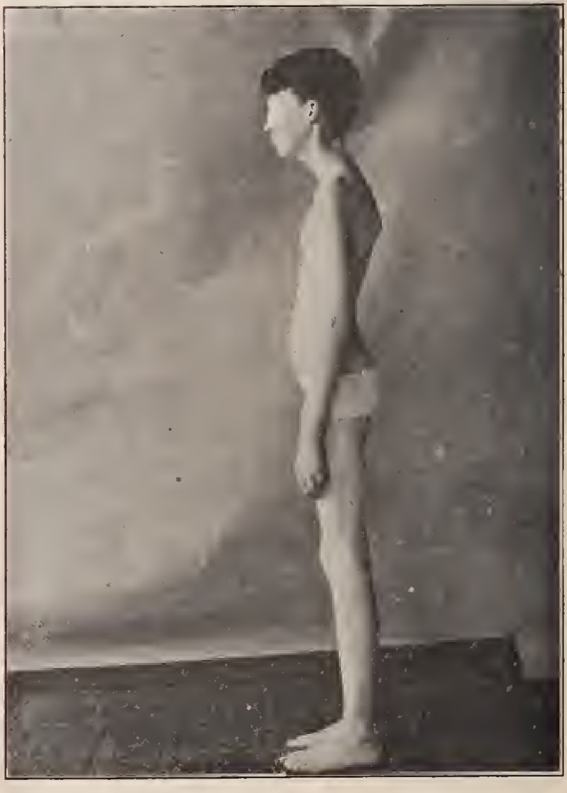

Figure 8.

Case 10.—Barton K., aged 12 years. Boy has always been high strung and undernourished. Very severe constipation all his life. For ten years has had marked head rolling during his sleep. Always tired on rising and easily exhausted on slight exertion. Digestion difficult. In fact, he is one of those difficult medical problems who have been in the care of a large number of specialists. His faulty posture and marked constipation were treated by an abdominal support four years ago, but the support was soon discarded, as it was uncomfortable and limited his activities. February 5, 1922, his tonsils and adenoids were removed. Figure 5 shows his poor posture. June 5, 1922, he weighed 73 pounds. He had very little endurance, marked pallor, severe constipation and poor appetite. An abdominal support, exercise and rest periods were prescribed. During the summer he was at a camp with twenty-five other boys. He improved markedly, returning with a weight of 77 pounds, having climbed Mt. Washington and won the silver cup at camp. The cup was given for the best boy in athletics and behavior. When he returned September 14, 1922, the bowels were regular without medicine, sleep quiet and restful and sound until one minute before awakening, when he rolled his head actively. General tone and color very good. Appetite excellent. Figure 6 shows support applied. Figure 7 shows improvement in posture.

September 26, 1922: Has been at school ten days, without effort or nervous strain. First time in his life he has been able to attend full session of school. He now weighs 82 pounds 6 ounces, a gain of 9 pounds and 6 ounces in two and three-quarter months. He is the picture of health. No longer any head rolling.

Case 11.—Robert G., aged 12¾ years. Was brought on account of poor appetite, extreme nervousness, pallor, loss of weight, and marked fatigue syndrome. He was a premature baby, and his feeding was always a difficult problem.

Muscle tone poor and pallor very marked. Bowels constipated. His posture was very bad, as shown in Figure 8. Exercise and rest periods after meals, combined with an abdominal support, ordered.

September 13, 1922: Child very hard to manage. Has removed his abdominal support for short periods, and exercises taken spasmodically, until last three months, when exercise was taken under an instructor. He weighed 72 pounds 5 ounces, a gain of 9 pounds and 5 ounces in a year. Nervousness very much less. "Like a different child." Bowels regular and appetite good. Does not tire.

Treatment in all the cases consisted in rest periods after meals and an abdominal and back support, and, in some cases, special exercises. All the sleep possible was obtained, and the rest periods were at least a half hour long. The importance of rest has been clearly shown by Dr. Talbot and Dr. Brown,[6] Dr. Veeder,[7] and Dr. Kerley.[8] A properly fitting abdominal support of the character shown in the pictures was used. As Dr. Kerley says: "Probably the most useful individual measure that applies to all types of abnormalities both of the stomach and intestines is in the use of a well adjusted abdominal belt." Time will not allow me to explain the mechanical details of construction and application of the support used.

SUMMARY

In fifty cases treated, all improved except two. In these the abdominal supports were of an early design, with under strops. Owing to discomfort of leg strops, children would not wear the supports. Faulty posture can, of itself, cause many obscure nutritional and digestive disturbances, only cured when faulty bodily mechanics are corrected.

The first improvement is a return of normal color and an improvement in disposition, followed by an increased endurance and a gain in weight.

A large number of undernourished children who do not respond to good hygiene and changes in diet are easily cured by a correction of poor bodily mechanics.

It is important to examine all children with special reference to posture when they have poor appetites, tire easily, are constipated, irritable and undernourished.

Cyclic vomiting cases also demand careful examination as to poor posture.

While correction of poor bodily mechanics takes time and patience, it will clear up many obscure conditions.

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16 W. Montgomery Ave.

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DISCUSSION

Dr. H. H. Jenks (Philadelphia): The subject of posture as outlined by Dr. Nicholson is a most timely one. His paper brings out several interesting points. No matter with what class of children one is practicing unless the physician is eternally on the watch he is apt to overlook a faulty posture as a cause of symptoms even though these symptoms be prominent. Not only among the so-called lower classes but among children of the well-to-do quite marked postural defects are astonishingly frequent if one will only search for them, and with their correction relief will be afforded to often very puzzling symptoms. Dr. Nicholson's photographs and his case records bring this out very clearly.

There are certainly children with the following complaints whose basic fault may be a postural defect, and unless this is carefully searched for and eliminated no amount of medicine will effect a cure. These easily overlooked symptoms may be a general fatigue and undue irritation, restlessness at night and nervousness during the day time, lack of concentration for their school work and the fact that they never progress at school. In examining these children it must not be forgotten that fatigue may cause faulty posture and faulty posture may cause fatigue. It is a striking example of the so-called vicious circle.

These children should be completely stripped for examination. The earliest of the body muscles to show fatigue and among the most important are those of the lower abdomen. We must watch not only for the flat chest and curved spine and flat or pronated feet, but above all study the enlargement of the lower abdomen. If this is relaxed and more prominent below the umbilicus than above it, there is certainly a definite postural defect. Dr. Nicholson's results with his treatment of constipation in these children is a revelation. It is very easy to give a laxative to these children but such poor practice. If they can be cured and permanently cured, as his children apparently are, by the use of a simple abdominal support worn for a few months and then discarded, his method is worth copying. It used to be considered very pernicious practice to rely on support for these posturally defective children, but exercise alone will not effect a cure in many of these cases. We must not rely entirely on the belt of course, but the hygiene and diet must be studied and in conjunction with the belt, proper exercises must be instituted. Rest is a very important factor in the cure, and these children, at least in the earliest part of their cure, should have two periods a day of one hour each of absolute rest, preferably in the Goldthwaite position—that is, flat on their backs without any pillow under the head but with a small pillow along the spine from the crest of the ilium to the lower border of the scapula.

The only unfortunate element which I have seen in the Nicholson belt is its cost. It has been difficult to persuade many people to pay the sum necessary to buy one of these belts and, of course, with the poorer children who are crying for this treatment it is entirely out of the question.

In conclusion, I would emphasize the fact which Dr. Nicholson has not brought out strongly enough, that this belt cannot be simply ordered and given to the patient, but the child must come back to the physician for careful and sometimes frequent readjustment of the brace, as very often the instrument maker does not have the required skill to fit the brace to the posture of the child. That is a very important point and is probably one of the explanations why Dr. Nicholson's results in his own cases have been so brilliant.

Dr. John D. Donallelly (Harrisburg): Dr. Nicholson is to be congratulated upon the thoroughness of his study and the clarity of his paper. His case reports pictured the faulty posture and bodily mechanics which we found frequently in some two hundred malnourished children from fourth class school districts in eastern Pennsylvania. These children were gathered in Camp Hale—the Children's State Camp above Hamburg—for study and care during the month of August. Ninety-one had faulty posture, e. g., some had various types of chest, vertebral and bone deformities and presented symptoms similar to those enumerated by Dr. Nicholson.

From experiences in some of our tuberculosis clinics we knew that little could be accomplished in the way of cure among children having chest findings suggesting incipient pulmonary tuberculosis without first correcting their posture. Faulty posture is frequently associated with malnutrition and the more marked cases are invariably indicative of overfatigue. In such children chest expansion is more or less limited and the lungs are not completely aërated with each respiratory excursion, circulation is not at its maximum and the tendency to abdominal visceral ptosis encourages constipation and probably retards assimilation of digested foods. Often they have poor muscle tone.

In the absence of supports, such as Dr. Nicholson described, we depended solely upon rest, increasing muscle tone by an abundance of nourishing food and exercise in the form of games. After a child had been sufficiently rested and the fatigue overcome he was given specific exercises designed to limber up the joints, strengthen the abdominal, back, chest, leg and head muscles, at the same time rounding out his chest and increasing its expansion. Those with such deformities as grooved chests or scoliosis, were given special exercises to develop their muscles so that they might help straighten out the offending part. Meantime the children were taught how to stand and sit properly, as well as to maintain good carriage while walking.

Pursuing the method of corrective exercises supported by improved nutrition we were able to send home fifty children whose posture almost approached normal. The others showed encouraging improvement. Much of the success depends upon securing the full coöperation of the child and instilling into him the will to persevere with his treatment after returning home.

Many of these children had poor appetites at home but, while in Camp, they readily handled 150 to 180 calories per kilo per day. They improved mentally and physically. We can endorse Dr. Jenk's statement that such children are usually under par mentally, careless and poor at concentration. All our children were given mental tests by Dr. Francis N. Maxfield, of the State Department of Public Instruction, and those below the average were submitted by him to individual study. With improved posture and nutrition their appearance on leaving Camp was a distinct and happy contrast to that on entering.

Dr. John F. Sinclair (Philadelphia): I want to congratulate Dr. Nicholson on this very clear demonstration of this important subject, and to say in opening that I have not had the opportunity so far of using his belt, and so I cannot speak from that standpoint. But a thing that has impressed me in regard to a number of the cases of faulty posture with poor nutrition that I have seen, has been that before they have come into our hands they have been unfortunately sent to some gymnasium or some teacher who uses gymnastic exercises, and usually they are made worse rather than better by that. I believe the explanation for it is that the gymnastic teacher has in mind the value of exercises to too great an extent and perhaps too little value is given to the great necessity of rest. I believe that if these children have a good, well supervised and nourishing diet, and a liberal amount of rest—that is, long hours of sleep and rest in bed at night at definite times similar to those Dr. Nicholson speaks of, and rest after eating—that they will improve far more in their earlier stages with the proper nourishment and rest than they will if they are given exercises. Exercise is all right in the later stages, but I believe that it is harmful in many of these cases in the earlier stages. What I have used instead of the belt, and it might help some of Dr. Donnelly's poorer people, is a board that is fitted in such a way that it has about an angle of forty-five degrees or a little less, so that the child can lie down on that after its meal for a period of probable half an hour to three-quarters of an hour. That throws the head back against the board in a not uncomfortable position. There is no head rest which brings the shoulders back, and naturally the abdomen, when the child relaxes, comes into better position than it is when the child is in the standing position. I do not mean that that will take the place of Dr. Nicholson's belt, but I do believe it is a cheap and ready means of helping these cases where we cannot have the expensive belt that Dr. Nicholson suggests.

Dr. James O. Wallace (Pittsburgh): This subject is of great importance. I have been interested in orthopedics; have followed it for quite a while. I believe that a great many of these cases are congenital and come in under Goldwaite's visceroptic type and are cases which should be watched from the very first. I believe, from Dr. Nicholson's pictures and from Dr. Donnelly's remarks, that they do not just quite get the right posture. Goldwaite says the posture should be a slight forward inclination of the chest. The posture that the child has is a tipping downward and forward of the pelvis. Teach them to throw back the pelvis and allow their shoulders to come slightly forward.

In regard to the mentalities of these patients, I think there is only one type that is really precocious. They are always better in the evening; they are poor in the morning; they do not want to get up.

The cyclic vomiting, I think, has been explained in these children. The pylorus goes into a spasm, then you have a dilatation of the stomach and a churning over of the contents. The stomach is not emptied out and when the stomach at last gets too much in it, then they start and pour it out for three or four or five days. My practice has been to put these children and adults in a reclining posture after their big meal at least, and after every meal, if possible. The easiest way to do that is to let them lie with their legs over a sofa and put a pillow under the buttocks. That slants them down and throws the strain off the pylorus and the intestines slide up and then the stomach empties. By emptying the stomach often they regain their tone.

The abdominal pad is a poor name for the brace. I should call it a back supporter, because after all, throwing back your pelvis and throwing your chest a little forward will bring up your abdominal muscles. Then after that use graduated exercises. The great mistake with most gymnastic teachers is that they overdo the muscles, and when you overdo a muscle, especially an infantile muscle, you have a hard time to get it back. If they start in on exercises they should not do more than five at one time.

Dr. Nicholson (in closing): The price of this belt is about fifteen or sixteen dollars. I have nothing whatever to do with the manufacture of this belt, in any way, shape or form. I do not control, or have anything to do with the present price, or will not in the future.

There are several points that have been brought out which I might emphasize a little more. This is not a case of support curing these cases. The rest is just as important as the support, and the rest was given most of these cases with the child lying with a slight pillow under the small of his back. I have not tried the method that Dr. Wallace mentioned of hanging the legs over, although it would appear to me to be a little bit uncomfortable.

In regard to these children mentioned by Dr. Donnelly, where supports are not available, the important thing is this: that they cured only fifty cases of their ninety-one cases by exercise. A great many of these cases we see are below par at the time and if they were given exercises they would be made worse. The particular boy who climbed Mt. Washington this summer was treated by a lot of exercises. He was given endless exercises and he continued to get worse, and it was only when he got proper support with rest in between the exercises and was given very gentle exercises, that he began to improve rapidly.

Another thing I want to emphasize. I do not know where Dr. Wallace got the idea about holding shoulders back forcibly. We tell them to pull the abdomen in and elevate the chest, which strengthens the back and throws the shoulders back to a certain extent. I do not agree that it is purely the support of the back. I think there is another factor. When you put a pad on the abdomen without any pulling in of the abdomen, you will not increase the interabdominal tension or increase the flow of the blood on the venous side of the digestive organs, which is very important and enables them to get more nourishment out of their food so that they can start to build and get better muscles, which, in turn, will support the child and hold him in proper position. These children, although they may have attained good posture, are very apt to have a recurrence unless the support is kept on quite a while after their symptoms have disappeared, when they apparently clear up entirely. Exercise and rest periods and support all have to go together. It is not a case of support alone, although I feel that it is the first and most important procedure with which to start treatment.

SPINAL ANESTHESIA. A STUDY OF ABOUT 15,000 INDUCTIONS*

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Spinal anesthesia (rachianesthesia, medullary anesthesia, intradural anesthesia, lumbar anesthesia or more accurately rhizanesthesia. radicular anesthesia) is not a true cord anesthesia but a root anesthesia produced by the injection of a local anesthetic into the cavity of the spinal arachnoid.

J. Leonard Corning, of New York, in 1885 first produced spinal anesthesia by a supposed extradural interspinous injection of cocain; but it was in 1889 that Augustus Bier, of Bonn, by an experiment on his own body first introduced intradural anesthesia into surgical practice.

Bier's method with cocain was widely tried but quickly abandoned by most surgeons. Bier, however, continued his investigations, and in 1904, with the discovery of the powerful synthetic local anesthetic, stovain, by Forneau, and its advocacy for spinal anesthesia by Reclus, Tuffier and other French surgeons, interest in the method was revived. In the fall of 1904, impressed by the demonstrations of rachistovainization by Leon Kendirjy in the Clinic of Professor Humbert, Hospital Cochin, Paris, I introduced spinal anesthesia into the surgical clinic of the Samaritan Hospital, Philadelphia, and here the intradural injection has continued the major method of producing anesthesia during the eighteen years that have since elapsed.

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Our experience may be divided into three periods:

(1) An early experimental, and developmental period, marked by problems as to technique and physiology, uncertainty as to drug and dosage, and a distinct morbidity and mortality. In my first 5,000 injections, nine patients placed on the operating table when in extremis died while under the anesthetic and a tenth patient died two days after the injection, as a result of our tardy and bungling efforts at resuscitation. A number of patients, in alarming condition from the anesthetic, were revived by stimulating intravenous injections, with at times associated artificial respiration and cardiac massage. Six patients had a transient abducens-palsy, one had posterior radiculitis from the injection of a nerve root, many had severe or mild postoperative headaches, and one had a needle break between the spines. In perhaps ten per cent. the anesthesia, in location, intensity or duration, was insufficient for the operation undertaken. In no case, however, was evidence of a destructive action of the drug upon the cord proper observed.

(2) By the second period, beginning in 1914, the technique had become fairly fixed and dependable. High spinal anesthesia was not attempted, the injection was withheld from the patients in extremis, and others considered very bad risks were usually given local anesthetics. While alarming symptoms after the injection occurred occasionally, there were no deaths under the anesthetic, no abducens or root palsies, and no evidence we could confirm of injury to the cord. Postanesthetic headaches, although much less common, were occasionally severe, and transient nausea or vomiting under the anesthetic was common.

(3) In the third and recent period the underlying fundamental principles of spinal anesthesia have become more evident. Anesthesia of the desired operative area usually is uniform and satisfactory. The continued absence of mortality from spinal anesthesia in my service in a period marked by two deaths from ether and one from nitrous oxid-oxygen, inclines me to believe that in its field the intradural injection may have greater relative safety than we have previously thought, approximating or exceeding that of ether. In this third period, the postanesthetic morbidity has been limited to rather rare headaches, occurring, indeed, less frequently than in contemporaneous patients who have had ether. Alarming symptoms, however, continue to be observed under spinal anesthesia, indicating potential dangers we always fear and against which we continuously strive to guard.

In 1908 I reported before this society an early experience with 658 inductions. At present about 60% of all our operations are carried out under spinal anesthesia, 26% under local anesthesia, and about 14% under gas, ether, or other general anesthetic. About 90% of the more serious operations below the diaphragm are performed under the intradural anesthesia, and the experience of my associates and myself is based on over 15,000 of these injections. The list includes a large variety of operations, ranging in severity to complete gastrectomy, splenectomy, resection of the pancreas, resections up to 14 feet of intestine, to iterileo-abdominal amputation and panhysterectomy for carcinoma. Over 1,000 of the operations were upon the stomach, gall-bladder, or biliary ducts. Over 2,000 operations were upon the appendix and over 3,000 were for the relief of hernia. A large number of operations were upon the pelvic organs, kidneys and extremities; several hundred for forceps delivery, version, cesarean section or other obstetric operations. A small series embraced operations on the spinal cord, chest, neck, mastoid, jaws and cranium, and demonstrated that until a local anesthetic having a selective action on the posterior nerve roots is discovered, spinal anesthesia for operations above the level of the diaphragm is unsafe. Nearly all ages and conditions were included, the spinal anesthesia being found efficient but to be used with caution in the octogenarian and relatively safe in the newborn.

Most of the drugs available for local anesthesia, including cocain, eucain-lactate, tropacocain, stovain, alypin, procain and butyn have been tried. A number of these, particularly stovain, tropacocain and procain have been tried over a thousand times each.

Although the preferred anesthetic for most serious operations involving structures below the diaphragm, we are persuaded that rhizanesthesia is not of general applicability, nor is it a measure to be recommended without skilled and continuous supervision. In from 3 to 5 per cent. of the patients coming to operation, the injection, unless used with great care, involves unusual risk to the patient. For many of these patients, local anesthesia should be substituted on account of its greater safety. I trust I may make clear, however, that the determining factor in the success and safety of spinal anesthesia is the user rather than the method. If spinal anesthesia is dangerous it is because it is used carelessly and without recourse to the necessary safeguards and antidotal measures. If it is ineffective it is because the technique has not been acquired. If there are frequent postoperative headaches or other unpleasant symptoms, it is because something has been done that should not have been done. If I report fatalities I also report my personal incompetence.

I shall not urge you to use spinal anesthesia, for its use may bring you criticism and worry. The easy path is the well trod path; but I should like to show you that if you care to take the trouble to master the technique you will have at command, in its field, the safest anesthetic, the quickest anesthetic, and the most relaxing anesthetic of which we have knowledge. But you will assume more personal responsibility and incur more criticism by using spinal anesthesia than by using a more conventional anesthetic. Lest you may misunderstand, let me hasten to emphasize and explain the qualifying clause, "in its field." The factor of safety depends not only on the agent, but also upon what is demanded of it and frequently on what it fails to do. For operations of a few minutes' duration not requiring relaxation, gas or gas-oxygen is preëminently safe; but for operations requiring time and much relaxation, ether or even chloroform skillfully given is safer than gas-oxygen. Then, an anesthetic in itself of little danger may turn the balance against the patient by being unsuited to the particular operation, the danger coming from the operative difficulties produced by the anesthetic. For example, local anesthesia by procain is considered the safest of all anesthesias. Yet, when used in acute peritonitis with great abdominal distention or for some enormous incarcerated hernia, the increased evisceration, peritoneal manipulation and exposure, and the prolongation of the operation resulting from the use of the local anesthesia may so increase the final mortality of the operation that spinal anesthesia, which contracts the intestines, completely relaxes the abdominal walls and eliminates abdominal respiratory movements, and enables the operation to be done quickly, easily, with the least intra-abdominal manipulation, although having a greater potential danger, is really the safer in the particular case.

Physiologic Action: All local anesthetics, when introduced within the spinal arachnoid, tend to interrupt conduction in the spinal nerve roots reached, with variations as to duration, character and intensity of action, dependent on the drug, the dose and the concentration. While there is conduction block in the spinal nerve roots, impulses continue through the less exposed tracts of the cord. A true anesthesia rather than analgesia is produced, for pain, tactile, thermic, position, muscle, visceral sense, and vasomotor impulses are interrupted or reduced in the involved segments. There is, therefore, anesthesia, motor paralysis, vasodilitation, great fall in blood-pressure, slowing of the heart, reduction in respiratory movement, increased peristalsis, and continuance of contractions in the ureter and uterus. The posterior and anterior nerve roots, the white and gray rami communicantes, the sphlanchnic afferent system, the cardio-augmentor nerve, may be blocked by the anesthetic. The presence of the vasomotor centers for the head, neck, upper extremities and thorax in the upper thoracic cord, and those of the lower part of the body in the lower thoracic and upper lumbar cord explains the general intense vaso relaxation often seen in spinal anesthesia. The stimulating action of the vagus on the upper alimentary tract, its inhibiting action on the heart, and the action of the intrinsic ganglia of the heart and intestine continue partly or completely unopposed. With the diminished circulation there is reduced function of the liver, kidneys and other organs. If the cerebral anemia is marked, unconsciousness may occur.

Toxicity: The safety factor of lumbar anesthetic rests largely upon the slight protoplasmic disturbance produced. The local irritative action of such a protoplasmic poison as stovain becomes unimportant through the great dilution. The one-half to one grain of drug used, diluted by the total cerebrospinal fluid, gives a percentage strength of less than 1 to 2500. Spinal anesthesia acts chiefly upon certain spinal nerve roots, with no appreciable chemical effect on the liver, lungs, kidneys, or other parenchymatous organs. Three-fourths of the body may be relaxed and rendered insensitive for one or two hours by the injection of a few centigrams of a mildly toxic drug. In no other known way can as intensive and extensive an anesthesia be produced by the introduction of as little toxic matter into the body. The intradural anesthesia, therefore, conserves the general resistance of the body, in relation to the degree of anesthesia produced, better than any other known agent. In diabetes, in toxemia, in severe infections or in any case where metabolic and protoplasmic damage from the anesthetic is a serious factor in the operation, spinal anesthesia should be considered. In acute or chronic pulmonary diseases, acute or chronic nephritis, uremia, cholemia, eclampsia, it may greatly increase the safety of the operation. It has no influence on the lipoids, as have ether and chloroform. In cardiac hypertrophy, mitral stenosis, arteriosclerosis, hemiplegia, and nephritis with high blood-pressure, the fall of blood-pressure produced by the injection may be protective.

Quickness: The action of spinal anesthesia is so rapid as to be almost instantaneous. Rarely can the operator arrange the patient quickly enough for the incision to be ahead of the analgesia. Therefore, it does not consume time or cause delay in an emergency.

Relaxation: Complete muscular relaxation in general anesthesia is produced by greatly increasing the risk. Spinal anesthesia gives complete muscular relaxation with the least relative risk. Abdominal packs and pads often are not required, and respiratory movements rarely are troublesome. Therefore, the surgeon operates rapidly, easily, and with the least traumatism to the tissues. Instrumental delivery in advanced pulmonary tuberculosis is facilitated without physical strain on the part of the mother.

Elimination: The anesthetic is novel among anesthetics in stimulating peristalsis and at the same time relaxing the sphincter ani, so that the patient returns to his bed relieved of such decomposing material as may fill the lower colon and rectum. It is indeed a powerful remedy in functional intestinal obstruction. After an abdominal operation under general or local anesthesia, it is rare to obtain a satisfactory emptying of the lower bowel until 36 or 48 hours have elapsed. Differing from most general anesthetics, secondary elimination from the lungs and kidneys is not disturbed. Even nitrous oxid, if so used as to cause even a slight but prolonged cyanosis, may induce tissue changes that seriously embarrass elimination.

Adaptability: Spinal anesthesia is one of the most adaptable anesthetics, for no matter if the patient is old or young, thin or fat, weak or muscular, thick-necked or short-necked, alcoholic or abstemious, analgesia and relaxation are produced. The patient may be asthmatic, or the stomach may be distended with food, but the anesthesia is not interrupted. It is not like gas-oxygen, which may so fail to relax the muscles that ether which the operator had wished to avoid must be used; nor like ether, which may cause violent and dangerous vomiting, coughing, pulmonary congestion, cyanosis, or rigidity, so that the surgeon is driven to use chloroform or to struggle through an operation greatly embarrassed and hampered by the condition of the patient.

Spinal anesthesia does not cause postoperative nausea or delirium and therefore protects against postoperative damage to the wound from involuntary movements of the patient.

Cost and Equipment: Cost, simplicity, and adaptability are not to be compared with safety and efficiency, but it may be mentioned that an anesthesia which lasts from one to two hours costs about twelve cents, and that the complete equipment costs less than two dollars and may be carried in a vest pocket.

Disadvantages of the Method:

1. Spinal anesthesia is a technical procedure requiring attention and skill greater than that required in ether anesthesia.

2. It invites criticism from patient and colleague, because it is not a method in universal use. It is a peg upon which the neurotic or hysterical may hang many postoperative symptoms.

3. It may require precise antidotal and resuscitating measures which should be but are not always instantly available.

4. The analgesia is of limited duration, particularly in infants, and if the operation is unduly prolonged it may be necessary to finish with ether, nitrous oxid, local anesthesia or other measures.

5. Certain patients are bad risks for rhizanesthesia; notably those in severe shock or collapse; those with the circulatory failure of toxemia, other forms of sepsis, or cardiac decompensation; those with greatly limited respiratory function, as from pleural effusions or new growths, and those with severe degenerative myocardial changes. These contra-indications are not absolute. Nearly every case of pulmonary tuberculosis is suitable for spinal anesthesia. Large bilateral pleural effusions, however, render it difficult for the patient to breathe under spinal anesthesia. With the judicious intravenous use of adrenalized saline, a patient pulseless from hemorrhage or shock may be protected against the added fall of blood-pressure from spinal anesthesia. Such a patient, however, is a bad risk with any anesthesia except local anesthesia. Patients with high blood-pressure, with acute inflammatory disease or renal insufficiency are relatively good risks. No absolutely safe drug for spinal anesthesia has been discovered. The more efficient the drug the greater the danger; the more complete the muscular relaxation, favoring operative manipulations, usually the more intense the vascular hypertension and the greater the need of trained supervision.

Consciousness: While at times desired, consciousness is often objectionable to the patient. The ill effects of consciousness should be combated by mental diversion and the avoidance of anything that suggests fear, operation, danger or complication. I can commend a scientific professional "vamp" for male patients. We often encourage patients to entertain themselves by letting them sing, talk, whistle, or smoke. Cold compresses to the head, sips of cold liquids, bits of ice in the mouth, may divert the patient without harm. Usually an attempt is made to complete the operation before the patient knows that it has started. But the patient under spinal anesthesia need not be conscious. To produce unconsciousness, narcotic hypodermic injections, especially those containing morphin and scopolamin are given before the operation. A light ether or gas analgesic after the intradural injection will often satisfy the mind of a very nervous patient, and usually raise the blood-pressure 5 or 10 points. Deep narcosis from narcotics or inhaled anesthetics distinctly increases the danger of spinal anesthesia.

Lowered Blood-Pressure: Spinal anesthesia is characterized by a sharp fall of blood-pressure usually of from 20 to over 100 mm. of mercury. Against this, many drugs such as alcohol, atropin, strychnin, caffein, pituitrin, have but little value. Adrenalin intravenously, however, is a most powerful antidote and should always be available, but should be used cautiously to avoid overstimulation. The preliminary use of digitalis in the cardiopath may be of great value to enable the heart to withstand the sudden fall in blood-pressure, but is of no value in the sudden emergency. If the respirations are well maintained a fall of blood-pressure to zero at the wrist may be borne. The heart should not be permitted to stop beating, for if it does, not only is an instant intravenous injection of adrenalized solution usually necessary, but often cardiac massage and artificial respiration as well. Even though the respiration and pulse are finally resumed, the cerebral cortex degenerates and death is inevitable if the heart is permitted to stop over 7 minutes. It is evident, therefore, that the patient under spinal anesthesia should be watched constantly. Cessation of respiration usually is preceded by loss of the pulse at the wrist, and fortunately adrenalin usually improves the respiration as well as the circulation.

We have indicated that spinal anesthesia is dangerous in cases of hypotension of the circulation and depression of the spinal centers. Thus, in case of great shock or collapse from injury, hemorrhage or infection, spinal anesthesia should be avoided or used only when by a needle in the vein a sufficient amount of a solution of adrenalin may be administered during the operation to maintain a systolic blood-pressure of from 20 to 80 mm. of mercury. Only in this way should the surgeon attempt to use spinal anesthesia in a nearly pulseless patient. Very elderly and obese patients do not withstand depression of the circulation and respiration as well as young and thin patients, and if they have very poor myocardiums, local anesthesia should be substituted.

Degeneration of the Cord: While generally feared and easily produced under the different anatomical conditions found in dogs, secondary degeneration of the spinal cord should not occur in human practice. I have seen no case of secondary degeneration from the injection and can conceive of such a condition occurring only from an inexcusably bungling technique.

Secondary functional symptoms, however, are not uncommon, may be attributed to the injection and may subject the operator to much unwarranted criticism. In a critical or hostile community, the surgeon may well hesitate to induce spinal anesthesia in the neurotic or hysterical, or in a patient with tabes or other chronic spinal disease. Apart from the mental effect I have not found the injection harmful in these patients, nor do I exclude them.

We have in quite a number of cases, repeated the injection; several of the patients have had spinal anesthesia 3 to 6 times; one, 8 times; one, 12 times; yet in none of these cases has evidence of a lesion of the cord from the drug been observed.

Secondary Symptoms: Of these, headache is the most annoying. With the substitution of better anesthetic solutions and a very fine needle, spinal headaches have become rare, and probably are hardly more common than after spinal puncture, and by comparison less common than the headaches after ether.

Abducens-palsy disappeared over 12 years ago, with the introduction of aseptic alcoholized solutions for the anesthesia.

Nausea and vomiting, not uncommon in transient form on the operating table, in our opinion do not occur as secondary symptoms from spinal anesthesia. On the operating table it is more frequent after stovain than after butyn or procain.

Urinary retention and relaxation of the sphincter ani occur under the same conditions after spinal anesthesia as after ether or local anesthesia. I have found nothing to indicate a relationship to the lumbar injection.

Good anesthesia by intradural injection may be obtained by a variety of drugs and methods, each of which may appeal to the individual operator. After stating the basal principles time will permit me to describe only the very simple technique personally employed.

Basal Principles: Spinal anesthesia is a nerve root conduction anesthesia and not a cord anesthesia. In general, protopathic, epicritic, motor and vasomotor conduction are vulnerable to the anesthetic in the order given. Therefore, the protopathic loss is the most intense, has the widest segmental distribution and the greatest duration. The duration and intensity of the action on sensory, motor and vasomotor fibres, is directly as the dosage and concentration, but varies somewhat with the drug employed. For example, procain acts relatively more intensely on the posterior than the anterior nerve roots; butyn on the vasomotor fibres; stovain intensely on all three. Thus, in moderate doses, procain gives satisfactory protopathic loss and incomplete epicritic loss, the patient feeling the knife although it causes no pain; and the associated muscular tension may annoy the operator. Butyn gives such prolonged vascular hypotension that to avoid cerebral anemia it may be necessary to keep the patient in the Trendelberg position for 2 or 3 hours after the injection; while under stovain the patient has a less enduring fall of blood-pressure and has complete motor and sensory loss. Butyn and cocain are relatively the more powerful drugs, procain the weaker in the dura.

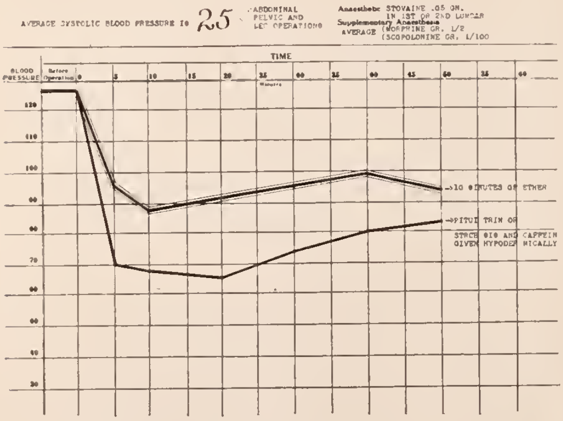

Chart Showing Systolic Blood Pressure Under Spinal Anesthesia

The duration of the analgesia is almost in direct geometric ratio to the dosage and concentration. Three centigrams of stovain will give an anesthesia of about 15 minutes, 6 centigrams of about 90 minutes. Thus in the young, as a small dose is used, the anesthesia is more transient.

The height and area of anesthesia vary with the interspace selected, the specific gravity of the solution in relation to the position of the patient, the bulk of the solution introduced and the force with which it is injected. From the lower dilutions the most intense action is upon the nerve roots close to the point of injection. The larger the amount of fluid withdrawn and reinjected and the greater the force with which the injection is made, the higher the zone of anesthesia.

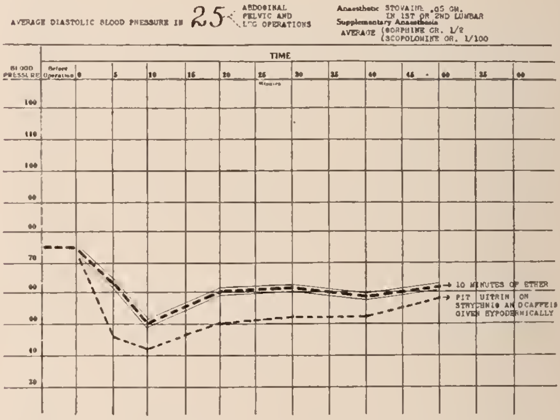

Chart Showing Diastolic Blood Pressure Under Spinal Anesthesia

Technique: We prefer a 2 c.c., accurately calibrated, all glass Luer syringe and a needle of nickeloid or platinum, gauge 20, 9 centimeters long, with sharp but obtuse concave point and a well fitting stylet. Large needles cause more pain in the introduction, and from greater dural leakage, may favor severe secondary headaches. The piston of the Record syringe is too heavy and is not moved by the intradural pressure.

The syringe and needle are carefully boiled in distilled water in a scrupulously clean separate basin without contact with alkali or other instruments. Only the operator touches the syringe, to whom it is brought while boiling hot directly before use. An assistant removes an ampule of the anesthetic solution from alcohol, wipes it with sterile gauze, opens it by a breaking traction, and holds it conveniently while the operator draws into the syringe the proper amount of solution. The hot syringe raises the temperature of the solution to about that of the body. In the meantime, the patient sits across the operating table well back from the edge, with her legs dependent. An assistant standing on a stool facing the patient, properly arches the exposed and carefully sterilized back by carrying his left arm back of the patient's neck to the front of her abdomen, where his left hand grasps the crossed wrists of the patient, and pushes backward on her abdomen as his left axilla pushes downward and backward upon the neck.

For upper abdominal work the injection is made through the twelfth lumbar interspace, for lower abdominal work through the first lumbar interspace, for operation upon the legs through the second lumbar interspace, while the third or fourth lumbar interspace is used for operations upon the rectum and perineum. The needle is entered in the mid line through the middle of the interspace and is directed at right angles to the skin. As soon as the resistance of the interspinous ligament is felt, the stylet is withdrawn and the needle cautiously carried forward until the snap as the dura is punctured is felt and cerebrospinal fluid escapes. To avoid the nerve roots the needle should not deviate laterally. The injection should not be given unless clear cerebrospinal fluid runs freely from the needle. The injection is made rather slowly, without undue force, and with several slight withdrawals of cerebrospinal fluid, not more than a few drops of which are lost. We use a solution lighter than cerebrospinal fluid, and after making the injection the patient is quickly laid upon the operating table and the head and shoulders inclined so as to be at least two inches below the hips. If there is nausea or marked vascular hypotension the head end of the table is still further lowered. It is important not to move or shake the body of the patient under spinal anesthesia until the vasomotor tone has been so restored that the patient does not become pale or pulseless on leveling the body.

The operation is usually started without delay, and an assistant with apparatus for instant intravenous injection close at hand constantly watches the color, respiration and pulse, and records the blood-pressure every 5 minutes. Shallow and infrequent respirations are treated by occasional admonitions to the patient to take deep breaths, and by the inhalation of aromatic spirits of ammonia or a little ether. If there is marked hypotension, 10 mm. of adrenalin are given intramuscularly. If the systolic pressure falls below 20 mm. of Hg., the intravenous injection of warm physiologic saline or Ringer's solution is immediately started; and if the pressure continues to fall, sufficient adrenalin is dropped in the solution to raise the systolic pressure to 40. The dose, which will depend on the patient and the effect produced, will range from ¼ minim to 100 minims of the 1-1000 solution. To avoid overstimulation the injection is interrupted as soon as the systolic pressure begins to ascend, later to be resumed intermittently as found necessary.

Cardiac massage, preferable through the abdomen, and artificial respiration may also be required if one fails to maintain the blood-pressure. Not over two per cent. of our patients require the intravenous injection; children and young adults almost never. In over 1,300 spinal injections of stovain in soldiers, only one, an obese Turk, under operation for gall-bladder disease, required the injection. As it was not given until after the heart had stopped, cardiac massage was also necessary to save the man's life. With the return of blood-pressure no further treatment should be necessary, except possibly artificial respiration, when the advantage of mouth to mouth insufflation must not be forgotten.

At present we use only stovain and butyn. The latter is still under test, but seems rarely to cause headaches and infrequently produces nausea on the operating table, although it causes an intense and prolonged fall in blood-pressure that may delay the elevation of the patient's head or moving the patient from the operating room. Butyn is a more powerful drug than stovain and much more powerful than procain, and seems nearly free from locally irritating properties.

SOLUTIONS USED BY AUTHOR

Stovain Solution: Stovain, 0.08 grams; lactic acid, 0.02 mil.; ethyl alcohol, pure, 0.2 mil.; distilled water, to make 2.0 mils. Seal in an ampule of nonsoluble glass. Pasteurize at 65 deg. C. for 30 minutes on 3 successive days. Dose for adults, 1.1 to 1.5 mils. Dose for infant of 2 days, 0.2 mils. Dose for child of 12 years, 1.0 mils.

Butyn Solution: Butyn, 0.04 grams; lactic acid, 0.02 mils.; ethyl alcohol, pure, 0.2 mils.; distilled water to make 2.0 mils. Seal in an ampule of nonsoluble glass and sterilize by fractional pasteurization. Dose for adult, 1.2 to 1.5 mils.

The lactic acid prevents the precipitation of stovain by the alkaline cerebrospinal fluid. The alcohol reduces the specific gravity so that the solutions are lighter than cerebrospinal fluid.

SUMMARY

(1) Spinal anesthesia is very valuable and effective for operations below the diaphragm, especially those in which complete muscular relaxation is desirable and local or general anesthesia is not well suited.

(2) It may be combined with or supplemented by light anesthesia with gas-oxygen, ether or local anesthesia by procain and adrenalin with increased safety.

(3) Spinal anesthesia should not, as a rule, be used in patients with great circulatory hypotension.

(4) If used upon unselected patients and those who are bad surgical risks, without special safeguards, a mortality of 1 in 500 may be expected.

(5) If used upon selected patients, with careful supervision, the mortality of spinal anesthesia is probably less than 1 in 10,000.

(6) As yet spinal anesthesia has not been developed to a point of safety for operations above the level of the diaphragm, and the technical skill and the special precautions required in its use render it unsafe for use in the hands of surgeons who have not carefully qualified.

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DISCUSSION

Dr. William A. Steel (Philadelphia): Abdominal surgery is the test of efficiency of a general anesthetic. This efficiency is gauged by four things: (1) that the patient shall have no pain sense; (2) that there shall be good muscular relaxation; (3) that the anesthetic mortality shall be nil; (4) that there shall be no bad anesthetic sequelae. In the hands of those skilled in its use, stovain spinal anesthesia, combined with sufficient narcosis to blot out psychic shock, fulfils those requirements in an ideal manner. Analgesia is complete in the lower 2/3 of the body. It gives the most consistent muscular relaxation of any anesthetic. With standardized products and technique the anesthetic mortality has dwindled during the past five years to a very low point. And the early reports of meningitis, palsies, neuritis, etc., following its use are present day myths.

Personally, I have given spinal anesthesia in 5,000 cases in the past 14 years with three deaths. We have had no mortality in the past five years, since local anesthesia has been substituted for spinal in bad risks with low blood-pressure. During this time we have had two deaths with novocain infiltration; one a ruptured gall-bladder, and one an advanced abdominal cancer. Had spinal anesthesia been used both deaths might have been attributed to it.

A fall in blood-pressure accompanies each spinal anesthesia. Its low point is usually ten minutes after the injection, and most deaths occur at about that time. After fifteen minutes one is working away from the danger point instead of toward it, as in most general anesthesias. Various stimulants have been used to anticipate this blood-pressure fall, notably hypodermics of strychnin, caffein and pituitrin. Actual blood-pressure tests prove them of little value. In desperate cases adrenalin given intravenously is the only reliable drug.

The rapidly diffusing inhalation vasomotor stimulants—ether, nitrous oxid and ammonia—are all of real clinical value in counteracting the spinal anesthesia blood-pressure fall.

The appearance of a patient under the first ten minutes of ether, with bounding pulse, red face and raised blood-pressure is the exact opposite of the pallor of the first ten minutes of spinal anesthesia. For the past year I have given a primary ether anesthesia in all suspected bad risks, especially in upper abdominal work, i. e., gall-bladder and stomach. Clinical and blood-pressure results would indicate that primary ether anesthesia is an efficient antidote. The ether is given for ten minutes. The average blood-pressure chart of 25 consecutive recent abdominal, pelvic and leg operations, where primary ether was given, shows a gain of eight points in the diastolic and twenty points in systolic blood-pressure, over 25 cases where hypodermic stimulants were used. Ether and nitrous oxid, by blotting out consciousness in incomplete morphin narcosis, aids in blocking psychic shock. But the prolonged action of ether is, I believe, an advantage over the more evanescent nitrous oxid.

Dr. J. Ralston Wells (Philadelphia): In listening to this paper so briefly told and so pregnant in fact, covering as we know many years of exacting work and research, much nervous apprehension, braving the many adverse criticisms and rising above the many disappointments, we are listening to the progress of a definite branch of surgery in the hands of a master in the art of spinal anesthesia. That Dr. Babcock is using various drugs in the local anesthetic series, stating that "until a local anesthetic is found with a selective action on the sensory and not on the motor nerves spinal anesthesia is unsafe above the diaphragm," goes only to prove in my opinion that we here are listening to a record of advancing knowledge and not of a satisfied, despotic mind fixed on one drug or technic. Without fear of too severe criticism, I think we may safely say that anyone using spinal anesthesia in a manner commensurate with the fixed basic principles of "safety first" in the art, or operating upon a patient who is in the hands of one competent to administer the spinal drug, does so with increasing frequency and an increasing feeling of safety both for himself and patient.

I think we all agree heartily with Dr. Babcock in his selection of patients and their contra-indications. Is there any one treatment, surgical procedure, drug, anesthetic or what not that is applicable to all patients? There is not and I dare say never will be any one anesthetic for all patients. A drug introduced in, or as near the central nervous system as a spinal anesthetic, to be void of toxic action of any kind would, I think, be void of any action whatever. What is wanted, as Dr. Babcock has stated, is a drug which the sensory nerves select and the motor nerves do not take up in the slightest degree.

Early in 1919 I observed a spinal anesthesia that came more closely to this idea than we had up to this time found. It was being used by Dr. Paul Delmas in the University of Montpellier, France. Dr. Delmas readily taught us the principles, from the manufacture of the agent to its administration. We are using his preparation of drug and his technic. The drug is cocain purified and sterilized by a very simple process. With the collaboration of the Department of Pharmacology, University of Pennsylvania, and the laboratories and staffs of the Presbyterian and Philadelphia General Hospitals, the ampules ready for use, with a known quantity of anhydrous cocain, as we are pleased to call it, are prepared and tested for sterility. We think that this preparation has overcome several of the many dangers incident to this class of anesthetics. Preliminary experiments on animals in the Laboratory of Pharmacology, University of Pennsylvania, have not been productive of definite differential results to date, but continued research, we hope, will place the cocain product on a definite footing with known standards. From many hundreds under Dr. Delmas and 76 consecutive cases of my own, there has not been one anesthetic death, no known cases of paralysis or other untoward lasting postoperative result. My own cases have been for most part in the Philadelphia General and the Presbyterian Hospitals.

We think our advantages are: (1) Selective action on posterior cord roots, the motor functions remain unimpaired, protopathic and epicritic sense gone. (2) The point of puncture remains the same for all heights. The technique, while simple, differs from the general technique, and for brevity I refer you to an article in the Annals of Surgery of April, 1920, read before the Academy of Surgery, Philadelphia. (3) Position of the patient during the injection or after has not the slightest effect on the height of the anesthesia. (4) The height is governed solely by the pressure of injection and once established is unalterable. (5) Operations on any part of the body may be performed, including the neck and head, and may be governed to within 4 cm. of the desired height. (6) No foreign materials aside from the pure dry crystals are introduced into the subarachnoid space, these being dissolved in the patient's own spinal fluid. (7) Absence of the postoperative headache, tingling of the legs, etc., so common to many of the spinal drugs. (8) Anesthetic time from 15 minutes to 2 hours may be governed to within 10 to 15 minutes.

While our series is small in comparison with that of our brilliant colleague, it is large enough to make us confident of something worth while added to the constantly growing knowledge of spinal anesthesia; but until we find a drug, or compound of drugs, that will give us all that we now have with the addition of stabilized blood-pressure we fall short of a safe, ideal spinal anesthetic. In my series we have had three complete failures of anesthesia (found subsequently to be due to a faulty drug) and in none of these have we had the customary fall in blood-pressure, showing rather markedly that the drug *per se* and not the technique or procedure is responsible for the fall.

The process is very simple. The patient is punctured always between the 4th and 5th or 3d and 4th lumbar vertebræ. Preference is given to Tuffier's points, i. e., the 4th interspace, because it seems easier of entry in the midline. In an adult we withdraw 25 c.c. of spinal fluid, regardless of the size or weight of the patient. The effect on the patient is practically negligible. Once in a while we have a slight feeling of headache, but that is because the spinal fluid has been withdrawn a little too rapidly. The spinal fluid pressure *per se* should be sufficient to fill your syringe. This being the case, we have no headache. The syringe is disconnected, the needle is left *in situ,* the stylet replaced. Our drug is dissolved in the amount of spinal fluid commensurate with the size; i. e., if we have 4 cgms. in an ampule, we dissolve in 4 c.c. of spinal fluid of patient. The cocain is practically instantaneously dissolved. The rest of the fluid is saved carefully and sent to the laboratory for test. We require examination of fluids for Wassermann reaction and microscopic study. One centigram gives 15 to 20 minutes of anesthesia; 2½ cgms. is the ordinary dose for the ordinary appendix or hernia, giving us about one hour and ten minutes anesthesia. One cgm. of drug being dissolved in 1 c.c. of fluid we can suck up with a syringe the amount needed for anesthesia, reattach needle and put slight traction on our plunger. We take out 17 to 26 c.c. and our point of stoppage is determined by the patients themselves. They will then complain of headache which becomes extremely severe, finally becoming very sharp and lancinating in character. At this point we consider we need quick action and 1 c.c. is immediately reinserted. Here we pause for a moment. The force of injection governs the height of anesthesia required.

For my own governing I have accustomed my fingers so that I have points 1, 2 and 3. Just letting it run in will give me an amputation of the leg or perineal operation. Force "1" will give me an appendectomy or hernia. Force "2" will take me to the upper abdomen for gall-bladder and stomach and diaphragm. It can be used for a low empyema. Force "3" is practically all the force I have at my command and that will take me up to the head and neck. The height of anesthesia, therefore, is a relative question. It needs a small amount of practice, but it quickly becomes apparent when you test out your cases. The first ten or twelve will quickly give you the height commensurate with what you wish. Blood-pressure falls almost immediately. We dread it and yet if we do not get it we dread that also. Once in a while it is delayed. It will fall, for example, from 140 systolic tremendously and sometimes it falls almost precipitously down to 50,40 systolic and we may begin to fear that it is not going to stop. Nausea may come on but a two or three minute inhalation of aromatic spirits of ammonia quickly overcomes this error and blood-pressure immediately starts to rise on cessation of nausea. In my experience this has been from three to seven minutes. As soon as we are over our preliminary reaction, then, with spinal anesthesia our patient rallies and becomes progressively more safe; whereas, in ordinary inhalation anesthesia you begin to fear for the safety of your patient as time progresses.

The drug we are using is any commercial cocain, put through an alcoholic ether bath and put up sterile, and used dry. I think if we can avoid it we should not put anything foreign in it. We do not think we have changed our cocain (we hope we have taken some of the deleterious products away from it) but we are introducing a pure drug and our results so far have been limited, but very gratifying.

An assistant dependent upon his chiefs for cases on which to use a new procedure gets very bad risks and if you turn them down your chief will possibly imagine the method of little value. Aside from two good risks I have had 74 extremely bad risks on which a general anesthetic was contra-indicated. I have done one on a systolic pressure as low as 95. As we progress and our chiefs become more used to our drug and action of it, we find we will get more normal pathological cases and our series will grow rapidly and thus we hope that we shall be relieved of some of the apprehension we have in our bad cases.

Again, I wish to congratulate Dr. Babcock on his enormous amount of work in this field and agree with all his assertions, warnings, indications and contra-indications regarding the use of spinal anesthesia. I think our cocain is a drug more nearly selective on sensory filaments than many others, but have yet to find something aside from adrenalin, difficult to handle in an emergency, that will definitely sustain the blood column to within a few mm. of the normal for the individual case.

Dr. Samuel J. Waterworth (Clearfield): I would ask Dr. Babcock about the technique of massage of the heart?

Dr. Babcock (in closing): Replying to Dr. Waterworth in regard to our technique for massage of the heart, we have used two methods. Where the abdomen is not open we make a simple stab wound about one inch long through the fourth interspace, one to two inches to the left of the sternum. The index finger instantly follows the knife, the base of the finger being wrapped with moist gauze to prevent the entrance of air into the chest. Running the finger around and behind the left ventricle, the heart is compressed about 20 to 30 times a minute against the overlying chest wall. The effect of the compression can be seen in the induced pulsation of the veins of the neck. In one case of enormous dilatation of the heart we were unable to compress the heart effectively by one finger, so a second stab was made well to the right of the sternum and the other index finger introduced. By simultaneous compression movements with the two fingers, the heart beats were reëstablished, but unfortunately a massive pneumonia and empyema made our efforts at artificial respiration ineffective and after beating ten or fifteen minutes the heart again stopped.

The abdominal subdiaphragmatic method is to be preferred and is always used where the abdomen is open. The hand is passed through the abdominal incision under the curving diaphragm on the left side and the heart compressed between the diaphragm and underlying ribs. It is not desirable or necessary to penetrate the diaphragm. I have had several complete recoveries by this method, but probably on account of associated conditions, have not been as fortunate with the transthoracic method, although it is rare that the heart does not show a transient response. It is to be recalled that sudden inversion of the patient, precordial fist percussion, and in the young, rhythmic compression through the elastic chest wall without an incision, will often start the heart beat.

I have had no experience with direct electrical stimulation of the heart, and our limited experience with needling and direct injection of the heart has not been encouraging.

It is important that, in the excitement, the heart and not the spleen or liver be massaged. As an example, some years ago I stepped into an operating room in time to see a patient undergoing a simple appendectomy apparently die under the ether. Under direction, the operator's assistant reported that his hand, feeling the heart through the diaphragm, detected no pulsation, and as I introduced upwards of 80 minims of adrenalin into a vein, he continued what was thought to be cardiac massage. But ten minutes elapsed and there was no response, which seemed inexplicable. Realizing that the cerebral vortex was probably dead from the prolonged ischemia I disregarded aseptic precautions, pressed a hand through the abdominal wound and compressed the heart but twice, when it began to beat violently. The patient lived some hours, but of course, did not regain consciousness. It is essential to press the old blood out of the heart so that adrenalin may enter the coronary vessels.

Dr. Wells has beautifully illustrated the selective actions obtained by diluting and by diffusing the solution used for spinal anesthesia. With dilute solutions the motor root fibres and the tactile and pressor fibres may largely escape, while posterior root conduction is interrupted. This occurs not only with cocain but with the other drugs used for spinal anesthesia. In other words, with dilute solutions the muscles may be rigid and the patient may feel the knife, yet have no pain. Increase the percentage strength of the drug and the patient is relaxed and has no form of sensation in the segmented areas involved.

We consider that with the drugs now used, the reaction is too dangerous and uncertain to be applied to the upper dorsal and cervical nerve roots.

ACUTE ABDOMINAL CONDITIONS IN CHILDREN FROM A MEDICAL STANDPOINT*

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Probably nothing is at times more perplexing than the recognition of the indications of the acute abdominal symptoms which one meets with in childhood, and nothing oftener the cause of incorrect diagnosis. Every physician who has had many sick children under his care must have made mistakes often, some of which he has discovered (although perhaps not until a postmortem examination) and without doubt he has frequently been guilty of errors which he has never had the chance to recognize later. I recall a case of my own in an adult, believed by one eminent physician and one equally eminent surgeon to be a duodenal ulcer. Personally I had no doubt of it whatever. Operation was done; death followed, and autopsy showed nothing at all wrong with the duodenum. I have believed peritonitis to be grip with abdominal symptoms; have seen typhoidal perforation of which there was no suspicion at all until autopsy, and could go on enumerating instances of personal errors. But further confession is unnecessary. I am convinced that my experience has been in no way out of the ordinary. For the sake of recalling our attention to the matter, it is my desire now to refer very briefly to a few of the numerous acute abdominal conditions which can cause difficulty in diagnosis in childhood, without making any effort to discuss them fully, as the allotted time will not permit of this.

First, naturally, appendicitis and the peritonitis, local or general, which accompanies this, come into our minds. One of the difficulties in diagnosis of the malady is the inability of obtaining any dependable statement, or any statement at all, from the young child. The youngest case I have seen was in an infant of 3 months, and it is hardly necessary to say that the condition was recognized only at autopsy. As the subject was an interesting one, a search of the literature was made for reports of appendicitis occurring in subjects not over 2 years of age, and 15 instances were found. In very few indeed of these was the diagnosis made during life. In fact, in those in which operation was performed, this interference was done either for hernia and the inflamed appendix unexpectedly found in the scrotum, or the disorder was supposed to be intussusception. The report to which I have referred was published quite a number of years ago, and the number of cases in medical literature undoubtedly has been much increased.

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Referring more especially to the discovery of abdominal pain in early life, even in children past the age of infancy the question of its existence or of its exact localization is a very uncertain one. Some exhibit abdominal pain and tenderness whenever touched. Others, through some psychic process difficult to understand, refuse to admit the presence of pain, and even deny that a part pressed upon is tender, although the physician may feel quite sure that the pressure must hurt. In fact one may see a child continue to shake his head in the negative when asked if the doctor's hand hurts him, and then suddenly burst out crying when the tenderness becomes too great to be borne. The determination of the existence of abdominal resistance is also often difficult, on account of the timidity of the child and his obstinate, voluntary (although unconscious) rigidity, whatever part of the abdomen may be touched. It is often only by successful efforts at diverting the attention that the presence of increased resistance of a portion of the abdomen can be settled at all, and this is an examination which requires patience, tact and control of the child. The value of a rectal examination in determining the existence of appendicitis under such conditions is not to be forgotten. In this way a diagnosis may be possible when examination through the abdominal parietes fails entirely.

The topic under consideration is that of *acute* abdominal conditions only, but it may be permitted at least to mention chronic appendicitis, which is often present in childhood and often supposed to be present when it is not. Many children are prone to suffer from repeated attacks of umbilical colic, and these are readily pronounced to be appendicitis with recurring outbursts of unusually situated pain, unless one is on guard. This umbilical colic, however, has certain characteristic features. It is liable to come on suddenly when the child is moving about or jumping. It lasts an hour or less, and disappears suddenly. It is, as the name implies, localized rather about the umbilicus, and not infrequently is of a very evidently nervous or even hysterical nature. Other cases seem to have flatulence as their cause, or perhaps depend upon a contraction of the intestines arising reflexly from the stomach; at least the children are prone to suffer from pain especially after eating. A physical examination, if successful, will show that there is no real tenderness. I have also seen recurrent vomiting, to which I shall refer later, supposed to be due to a chronic appendicitis, for which operation was done and great enthusiasm afterwards shown because attacks seemed to have ceased, until a year later when another, and fatal, attack came on.

Returning again to acute appendicitis, one must remember the very common simulation of this by the referred pain of pneumonia or pleurisy. This is something we all know about nowadays; but it was not so a few years back. I had the privilege a number of years ago of discussing this matter before one of the state medical societies, reporting at that time a number of very interesting instances from medical literature, in which mistakes had been made, and other unpublished cases, in some of which I had been mistaken myself. I had known physicians to send a case to the hospital for operation and become very indignant when the surgeon on duty questioned the diagnosis, and finally proved without operation that the disease was in reality a pneumonia. I have known surgeons of high standing, whose ability was beyond question, to operate for appendicitis when only pneumonia was present. All this is now rather ancient history, and we are prone to feel that we have learned our lesson; but one can venture to maintain that mistakes are still made and probably will be made, for the diagnosis is sometimes one of extreme difficulty. The recognition of this appendicular pneumonia rests principally on the history of the case: the sudden rise of temperature which remains fairly high; the rapidity of respiration, with some degree of dyspnea, the rate of respiration being out of proportion to the pulse-rate and the fever; the relaxation of the abdominal walls between the time of the individual respirations, and the disappearance of tenderness on deep pressure with the flat of the hand.

It is readily possible, too, to confound appendicitis with acute gastro-intestinal indigestion of a severe type. In both there are found vomiting and abdominal pain, and although diarrhea usually soon occurs in the digestive disturbance, yet not infrequently appendicitis follows or is attended by diarrhea. Aid in diagnosis may be had by the discovery of a decided leucocytosis. A persistent rigidity of the right iliac fossa is a very important differential diagnostic sign, when this can be elicited.

Intussusception is another condition seen in childhood which often causes decided difficulty in its recognition. Theoretically, of course, the symptoms of intussusception are typical, and the diagnosis is easy. Practically this is by no means always the case. I can recall one instance, seen in another city, where the diagnosis of intussusception was made, but which seemed to me to be a case of dysentery, and events proved that this was correct. I recall another case which seemed to be dysentery, but which finally turned out to be intussusception, the mistake luckily being discovered early enough to save life. In these dubious cases, it seems to me, the best course is to give the patient the benefit of the doubt and do an exploratory laparatomy. Of course it is embarrassing, to say the least, and distinctly harmful to the patient to operate in a case where dysentery is the cause; but not to discover the intussusception is a much graver error. The difficulty in recognizing intussusception consists, at least in part, in the fact that dysentery may exhibit stools which consist purely of mucus and blood, as in typical cases of intussusception; and, on the other hand, that intussusception, if partial or if of a more chronic nature, may still have stools in which there is fecal matter. Both diseases are accompanied by pain and tenesmus; but the pain of intussusception, theoretically severe, may not be very great, and vomiting which is so suggestive when present may be absent or slight. Consequently, careful study with the balancing of the pros and cons is required in many cases.

There is a form of peritoneal inflammation which offers some interesting peculiarities. I refer to pneumococcic peritonitis. Although the onset is sudden, there is often a remission in the severity, and the patient then does not present the ordinary aspect of a peritonitis. Later, as fluid begins to accumulate, the condition is suspected of being tuberculous in nature. The pus shows a decided tendency to become encapsulated in one or more foci, and indications of abscess finally become evident here. Pneumococcic peritonitis may be associated with a pneumonia or a pleural effusion, and then the diagnosis is made easier; but not infrequently the inflammation is limited to the peritoneum. This variety of peritonitis offers a much better prognosis under operative interference than when dependent upon some other germs. For instance, the peritonitis of the newborn is very liable to be streptococcic in nature, and to pursue a very unfavorable course. Naturally it must be borne in mind that not all cases of pneumococcic peritonitis run the course described. In some of them the inflammation rapidly becomes widespread, there is no remission, and the patient may die in a few days. A suggestive diagnostic symptom in many cases of pneumococcic peritonitis is the early occurrence and the persistence of diarrhea and abdominal distention, which may, however, readily point towards the existence of a typhoid fever and cause an erroneous diagnosis to be made.

Even in former years ulceration and perforation in typhoid fever were so much less frequent in early life than later that we did not often expect them; and now that the disease is so much less common we almost forget that these cases occur. Yet I have seen at least 10 instances of typhoidal perforation in childhood, and in many of them I was impressed by the difficulty in diagnosis. Some exhibited the typical peritonitic facies seen in adult life, and the diagnosis was simple. In others there was almost nothing to attract attention to the condition. In one little girl of 4 years, the attack of typhoid fever was mild. There was moderate abdominal pain, and on the day of her death the child sat up in bed in the morning, not looking ill and complaining only of "belly ache," which certainly was not at all severe, as there was no crying or special indication of pain and no evidences of collapse. Then in a few hours she died. It is difficult to see in what way we could have made a diagnosis of sufficient likelihood to justify operation. It is to be remembered, too, that hemorrhage in typhoid fever, although so much less common in childhood on account of the lesser degree of intestinal ulceration, may occur, and this at a very early period of life. I recall an infant of 5 months, in whom the course of the attack of typhoid fever could fortunately be watched from the beginning. Towards the end of life she developed intestinal hemorrhage and died a day or two later. Postmortem examination confirmed the diagnosis.

In passing, I may refer to the fact that abdominal pain and vomiting are not infrequent evidences of failing compensation in cardiac disease. These cases are, however, not characteristically acute, and the existence of the cardiac lesion ought to keep us from viewing the symptoms as purely abdominal in origin. Pain in the abdomen may likewise be a manifestation of abdominal purpura, may depend upon the hyperesthesia of meningitis or of myelitis, or may simply be produced reflexly by inflammation of the throat or nose.

There is another disorder occasionally seen, inflammation of Meckel's diverticulum, the symptoms of which resemble appendicitis so closely that diagnosis is difficult or impossible. Sometimes the manifestations are of a more chronic nature and simulate other disorders. I recall one instance in a child of 19 months—and two-thirds of the cases occur in childhood—suffering from abdominal pain and great anemia. Pernicious anemia had been thought of by one consultant who had seen the case, and with good reason. Then it was discovered that the stools contained occult blood, and sometimes blood unchanged and in considerable quantity. The abdominal pain remained severe, the child died and diverticulitis was found at autopsy with ulceration and perforation and the production of a localized abscess.

Gall-stone colic and acute cholecystitis are of such rarity in early life, that they need scarcely be considered. The diagnosis would not differ from that applicable to adult life. Renal colic, however, is not to be forgotten. In infancy the passage of gravel may produce symptoms closely resembling ordinary severe intestinal colic. In older children renal calculus may be recognized by the peculiar distribution of the pain, the renal tenderness, the retraction of the testicle, the vesicle irritability, and probably by alterations in the character of the urine, which is liable to contain blood and pus.

Most of the pathological conditions referred to are characterized chiefly by pain, although vomiting may be troublesome. There are others in which vomiting is the chief characteristic, with pain absent or a minor consideration. First of all may be mentioned the vomiting of pyloric stenosis. This is an acute disorder in the worst cases, and life does not last long. In others, in which the obstruction is less complete, the symptoms become chronic. The diagnosis is usually easy, if we have the possibility of the existence of the disease in mind. Often it is not, in spite of the employment of x-ray examinations, lavage, and the like; and even when it is clear, the question of treatment is far from settled in the individual case. This subject has been so extensively and widely discussed that it is impossible to enter upon it now.

I should merely like to say that more than once I have gathered with the surgeon and the attending physician around the infant's bed, and we have decided, with some uncertainty, but with the full approval of all, to wait a little longer, and then have seen the infant recover completely. More than once I have seen infants in good condition pass through an operation apparently successfully, and then in a few days fail and die. It is noteworthy, too, that the English physicians, and to a considerable extent many on the continent of Europe, have had excellent results from purely medical treatment. These things are not said here in any way in opposition to operation. I thoroughly believe in this being done in most cases. They are meant merely to point out that there are two sides to the matter, and that the physician who wishes to operate on every case is just as much in danger of making an error, although not so grave a one, as is he who is distinctly opposed to operation.

With regard again to the diagnosis, it is important to remember that there is hardly any one symptom or physical sign which can be looked upon as a positive indication. Thus, fecal movements may occur even when the stenosis is predominatingly of the hypertrophic form, and there may be projectile vomiting and retardation in the emptying of the stomach in chronic gastritis. Intestinal obstruction may produce obstinate vomiting and constipation, and even gastric peristalsis may result if the obstruction is situated high in the intestinal tract. Reference will be again made to this later. In one reported case what appeared to be gastric peristalsis was found on operation to be caused by two folds of the colon overlying the stomach; and there are other cases on record in which peristalsis has been present without giving any reason at all to suspect the existence of stenosis. The detection of the pyloric tumor is perhaps the most positive sign, when combined with other symptoms; but it often happens that this detection cannot be accomplished even in undoubted instances of the disease.

Recurrent or cyclic vomiting is another variety of acute severe vomiting which may cause us much diagnostic anxiety. When a child has suffered from repeated previous attacks the diagnosis is easy; but in the first attack, if it is a severe one, it may be most perplexing. I recall one case, in which the vomiting was almost constant, the prostration extreme, and the bowels so obstinately constipated, that intestinal obstruction was suspected. Another child was supposed by the attending physician and by myself to be an instance of recurrent vomiting, but death took place and we never knew whether or not obstruction was in reality the cause. With regard to intestinal obstruction, I have already referred to intussusception. There are other causes than this for obstruction, not common, but very confusing in the forming of a diagnosis. The possibility of a strangulation by a persistent Meckel's diverticulum or other band is to be borne in mind. Then recently I saw a case of severe constipation and obstinate vomiting in a newborn infant, caused by absence of a portion of the colon, and another in which there were the typical symptoms of pyloric stenosis, including peristalsis, but in which operation revealed a congenitally existing compressing fibrous band extending from the gall-bladder to the colon. Still another form of intestinal obstruction which may cause errors in diagnosis is the sudden development of symptoms connected with a hernia, undiscovered or known to exist.

It is perhaps because strangulation of a hernia so seldom occurs in early life, that we are prone to forget that the urgent abdominal symptoms may be due to this cause. The symptoms produced may readily be confounded with severe colic or with gastric disturbance. I have seen this mistake made in a child less than a year old. I should like, finally, to refer to the fact that repeated, obstinate vomiting is sometimes an early symptom of tuberculous meningitis. Generally other symptoms are present which make the diagnosis easy, but this is not always the case. I recall one instance in which the symptom had been present for perhaps a week, and arrangements had been made for me to see the child with the attending physician. On the day of my visit, and before it was made, convulsions set in, and the patient soon developed evident symptoms of tuberculous meningitis and died shortly after.

Of course the subject under discussion has been merely touched by these remarks, and very superficially and incompletely. There are many other conditions which might be mentioned. However, enough has been said to emphasize the fact that acute abdominal conditions in children are frequent and of great variety, and that they demand the very closest scrutiny and attention.

DISCUSSION

Dr. Albert F. Hardt (Williamsport): I am quite sure we all agree with Dr. Griffith regarding the difficulties encountered in the diagnosis of acute abdominal conditions in children, especially in very young children where we lack the coöperation of the patient as an aid to the interpretation of the symptoms. Nothing can be more unsatisfactory than the examination of a crying, struggling infant. Then again, we are often handicapped in being unable to obtain a clear history of the case. Fortunately, we do not have the varied cases of acute abdominal conditions that we have in adults, acute conditions involving the stomach, gall-bladder, pancreas and pelvic organs being comparatively rare. I wish to emphasize some of the diagnostic points of some of the conditions that Dr. Griffith has mentioned, especially those that are usually considered as surgical diseases.

In intussusception the ileocecal form is the most common, the sudden onset and the symptoms varying according to the degree of obstruction and the interference with mesenteric circulation. The pain is usually violent and of a colicky nature, often radiating from a definite point, followed by vomiting. These symptoms are followed by a few bowel movements containing mucus or pure blood. If the case is acute, the symptoms of prostration and collapse follow. Tenesmus may be severe if the obstruction is complete. The attitude of the patient is often characteristic, assuming a position on hands and knees during the paroxysms of pain. This is not peculiar to intussusception but it may be observed in cases where there is severe abdominal pain, especially of a colicky nature. The bloody stools are a constant symptom and the amount of blood may vary from a few streaks to a profuse hemorrhage. In the subacute type of intussusception the hemorrhage may cease for twenty-four hours, only to recur more profusely than ever. If the hemorrhage does occur, it usually means sloughing of the intestinal wall. The tumor is a very important symptom and is found in eighty-five per cent of the cases. In the sigmoid form of intussusception the tumor may be felt per rectum. Rectal examination is often a procedure of great value and we do not use it as often as we should. There may be a protrusion of the bowel which may simulate a prolapse or hemorrhoids. Distention is usually a late symptom and its absence is often of diagnostic value. In regard to the value of the x-ray in diagnosis, if the x-ray is available it is a very valuable means of diagnosis. It not only gives us the means of making an immediate diagnosis, but it shows the location of the obstruction, thereby saving time and manipulation of the bowel with its tendency to produce shock.

Dr. Griffith mentioned the fact that diverticulitis presents symptoms almost identical with those of appendicitis, and I think that is true.

In regard to reflex abdominal pains, I agree with Dr. Griffith that the error of confusing pulmonary conditions with appendicitis is a very common one and many operations are done with disastrous results. In pulmonary conditions the temperature is apt to be higher, the respirations more rapid, and there is absence of true rigidity. In cases of this sort the x-ray may be of use in detecting the pulmonary lesion. There is another form of reflex abdominal pain occurring during the course of throat infections. Here the pain and tenderness may be over the appendix region or may be diffused. The pain, usually, however, is out of proportion to the abdominal tenderness. This symptom of abdominal pain is very likely due to involvement of the abdominal lymph nodes. I have seen a number of these cases that have been incorrectly diagnosed, and I wish to emphasize the importance of making routine throat examinations.

In pyloric stenosis the symptoms are so characteristic and the physical examination so definite that if we take a careful history and make a careful examination the majority of these cases can be correctly diagnosed. There is no doubt, however, that many cases to-day are not recognized and are treated as cases of gastritis or malnutrition. The x-ray is a very valuable aid in the diagnosis of doubtful cases of pyloric stenosis. Inasmuch as the operative mortality depends entirely upon an early recognition of this condition, it is most important that we make an early diagnosis and that treatment be instituted before the patient's resistance becomes dangerously interfered with by starvation and prolonged vomiting.

In regard to appendicitis, we must remember that the symptoms of appendicitis in children are not as classical as those occurring in adults. There is apt to be higher temperature, but we must remember that temperature in appendicitis is a very deceptive symptom. There is less tendency towards the localization of pus. The appendix in children is apt to be longer and may be found in more variable positions than in adults; therefore the tenderness may be found in an atypical location. Pyelitis affecting the right kidney may be confused with appendicitis. We must remember that muscular rigidity always means peritoneal inflammation and that exquisite tenderness almost invariably means pus.

Dr. Edwin E. Graham (Philadelphia): I am quite sure we have all enjoyed Dr. Griffith's paper, and there is so much in it that warrants discussion that it is rather difficult to know just where to begin.

What Dr. Griffith said in regard to the child not being willing to admit pain, impressed me very forcibly. In fact, I think that is almost a routine with the older children, and in that way makes the availability of pain as the symptom often very much in doubt.

In regard to appendicitis in the older children, I think that our leucocyte count is often the deciding factor. The older children can, if they will, tell you of the presence or absence of abdominal pain and tenderness. You feel confident that there is a certain amount of tenderness in the region of the appendix; but a leucocyte count, if out of all proportion to the normal, often enables you to make a positive diagnosis.

In regard to intussusception, I heartily agree with the difficulty in making a diagnosis. I have sat around bedsides with physicians and surgeons and tried to decide whether it is necessary to operate. This is particularly true in the partial cases. In these cases one is very apt to be deceived by the fact that very often the symptoms entirely disappear for a period of some hours. I remember a case very recently seen with a most excellent surgeon in Philadelphia, a physician, and myself. We decided it was wiser not to operate because the symptoms had disappeared. The surgeon felt that an operation ought to be performed, and it seems to me that in all these cases where there is a question of doubt the case should be turned over to the surgeon.

One hesitates to say anything about pyloric stenosis, but I do sympathize with what Dr. Hardt said in regard to all cases of persistent vomiting and the possibility of pyloric obstruction. In these cases it is not usually, to my mind, a question as to whether there is or is not an obstruction of the pylorus. The question is whether it is necessary to operate or not. That is the problem most difficult for me to solve. In your examinations, your typical kind of vomiting, your peristaltic wave, your constipation, your x-ray examinations, they are all of help; but for years the one symptom that has decided me in these cases as to whether they should be or should not be operated on, is a gain or loss in weight. If the child is losing weight rapidly, I think it ought to be operated on at once. If it is not losing in weight or if it is gaining a little in weight, you can usually safely delay operation and watch the progress of the baby.

Dr. Percival Nicholson (Ardmore): In regard to the differential diagnosis between pneumonia and appendicitis, there are several interesting cases which come to my mind. A year ago one occurred which was discussed as to whether it was appendicitis or pneumonia. In that case the child ran a very high temperature. The x-ray failed to show anything in the chest whatsoever. The abdominal pain was not absolutely typical, and on waiting to the end of the third day, the child developed certain definite symptoms of pneumonia and went on to the crisis.

Another child came in with a leucocyte count of 34,000. In three or four days the abdomen was quite markedly distended. There was no localized rigidity. The x-ray failed to reveal anything except, as the x-ray man said, that there was a possibility of a very thin effusion in the left side of the chest. The case went along and showed no signs of pneumonia except a very slight lessened expansion on the left side. On the sixth day the child developed a crisis and on the seventh day the diagnosis of pneumonia was proved.

Then, recently I had two pyloric stenosis cases. One, a child, the third day after birth had a very large stomach and marked retention. In fact, eight hours after a meal was given a stomach tube brought back the entire contents of the stomach. An x-ray was taken which apparently confirmed the diagnosis and the child was operated on. It turned out there was no thickening of the pylorus, but the duodenum was held back of the stomach by a firm adhesion. This was relieved. In twelve hours the child died, and at postmortem a gastric ulcer was found. As far as I know that is one of the earliest cases of gastric ulcer in an infant which markedly exhibited all of the symptoms of pyloric stenosis.

Dr. Aaron S. Cantor (Dickson City): There is just one particular feature that I did not hear brought out in the diagnostic evidences of abdominal conditions, particularly that of appendicitis, and that is in the use of anesthesia. I can recall two distinct cases where the use of anesthesia made the diagnosis. One was about fourteen years ago. I made a diagnosis of acute appendicitis in a child fifteen months of age. The case was sent to the Episcopal Hospital of Philadelphia (where I was then practicing), and Dr. Neilson agreed with the diagnosis. While the child was under the anesthetic the abdomen was found to be nice and soft. Examination of the lungs disclosed the evidences of a lobar pneumonia. The child was *not* operated on and made a good recovery.

Another case I saw very recently. The child was two years old, with a distinct history of indiscretion in food. The child had been at a store of its grandparents and overloaded itself with almonds, figs, prunes, etc. Despite this history there was something suggestive of a surgical condition in the abdomen. I told the parents I would rather hear a surgeon say an operation was not necessary. A surgeon was called and after careful examination said there was no surgical condition present. He suspected rather a central pneumonia which would show itself in a few days. The next day the child seemed a little worse. It kept crying all the while and I could not make out anything definite by a rectal examination, on account of the severe pain or because of the extreme restlessness of the child due to a demoralization of the nervous system as a result of the pain. A medical consultant was now called and again said appendicitis was absent. I suggested we chloroform the child. Under the influence of the chloroform we were able to make out a large mass in the right iliac region and the diagnosis became apparent. That same day the child was operated upon and a ruptured abscess was found. The abscess was drained and the child made a recovery after a prolonged convalescence.

In these cases the use of ether or chloroform is indispensable and a life saving measure. The use of x-rays takes considerable time as compared to the very simple method of using a whiff or two of chloroform, and I should like to hear Dr. Griffith's opinion. Personally, it seems to me it is a very rational procedure and does not endanger the life of the patient even in the presence of a pneumonia, for the amount of ether or chloroform is extremely slight, just enough to enable the physician to make a proper abdominal examination in some of the puzzling cases in childhood.

Dr. Griffith (in closing): I have nothing to add. As I said, my paper was a hasty review; I did not attempt to include everything. I am very glad, indeed, that the speakers have brought up a number of points to which I did not refer. I could not put them all in.

SELECTIONS

NERVOUS AND MENTAL SYMPTOMS IN A CASE OF PELLAGRA*

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PITTSBURGH

Special interest attaches to this case because of the extreme rarity of pellagra in this section of the country. The patient came to us from his home in West Virginia. He was a married man of thirty-three whom I had treated a year previously for alcoholic nervousness and gastritis. On this present admission to hospital he complained of general weakness, diarrhea, insomnia and great nervousness. He said that when he first got sick three months earlier, he had worried over business difficulties a great deal and had become very restless. He had been drinking to excess, but had stopped six weeks after the onset of his sickness. Following this his nervousness was more acute, his gait became staggering and his legs painful. At this time he "could see things double." He reported that he had been confused and could not "think straight" for six weeks.

On admission the patient presented a picture which immediately suggested pellagra to Dr. G. W. Smeltz, who saw him for me during the first few days of his residence in the hospital. He was extremely weak and emaciated, restless and irritable, very depressed and at times presented fleeting hallucinations of sight and hearing. The skin of his face was a dusky brown of a soft leathery appearance. Over the nose and upper lip and chin the color was much darker, and in addition here the skin was covered with a grayish hard sebaceous secretion, giving a somewhat frosted appearance and a gritty feel. This extended to some extent upward over the middle of the forehead between the brows. The face was moderately swollen, especially over the more deeply involved central portion. The hands and feet presented also a dusky, deep brown, swollen appearance which was sharply delimited about two inches above the wrist joints (and above the ankles) giving the hands the appearance of being gloved. Both elbows presented an area of about two inches in diameter of roughened, brownish pigmented skin. These pigmented areas were dry, thick and rough. Elsewhere his skin was smooth and normal, except that a similar pigmented area covered the lower end of the sacrum, and on the inner side of the left knee there were three pigmented spots of about one-half inch in diameter. The patient's hands and feet were extremely sensitive to pressure and to cold. The pain and discomfort in the feet and hands was precisely that found in a severe neuritis. It was more severe in the lower extremities. Outside of diplopia and a sluggish reaction to light, the eyes were normal, and the extra-ocular movements good except for weak convergence. There was marked pyorrhea. A large amount of dentistry had been done. Mucous membranes of the mouth were red, and there were many small ulcerated patches, especially along the lateral borders of the tongue. The tongue was very red, with papillæ prominent, and the pharynx was injected. The patient said food had very little taste. The anterior cervical glands were palpable and firm, and the isthmus of the thyroid could easily be felt, being moderately enlarged. His chest organs seemed in good condition. The abdominal muscles were very tense and tender and the spleen could be felt with some effort. His deep reflexes were all hyperactive, but because of the extreme sensitiveness, Babinski was not sought for.

It is interesting to note that the patient insisted that the three small areas over the inner left knee had appeared first, and that they appeared in the form of blisters, taking on the brownish pigmentation later. The elbows were very early involved, he said, and two weeks later the patient had noticed the discoloration about the wrists, then over the hands. The feet had became involved at about the same time as the hands. He thought that the profuse diarrhea had existed from the time he had first noticed the discoloration areas, three months previously (diarrhea had existed, however, in lesser degree for a considerably longer period). There had been a loss of twenty pounds in weight. Vomiting had occurred at the onset. There was little desire for food after the illness began. The skin over the palms of the hands and soles of the feet became dry, cracked and thickened following the pigmentation, and the thickening became pronounced as the disease progressed. Sexual impotency had been present during the entire course of his illness. A week after coming to the hospital patient complained of pain in the left axillary part of chest, aggravated upon deep breathing. Outside of an occasional crackle heard posteriorly at the left base, examination was negative.

Mental Status: There was a history of periods of insomnia and confusion from the onset. These, together with restlessness, irritability and depression, grew more pronounced during the first ten days in the hospital. His anxious depressed state became acute, with extreme dread of death. He was very despondent over his condition, and particularly at night showed marked irritability, making it difficult for nurses and attendants. He imagined he was being neglected. He cried a great deal and was afraid to be alone. He often awakened calling anxiously for his wife or mother, or imagining people to be present who were not there. Two weeks after admission he insisted one day that he could not find his right hand, that he could not feel it.

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*Read before the Pittsburgh Neurologic Society.

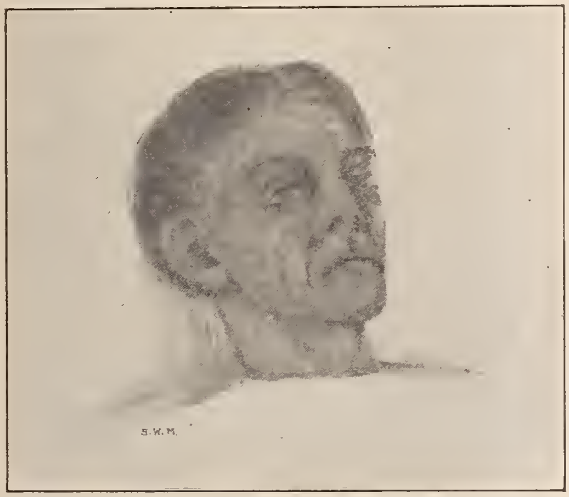

Figure No. 1.

Skin of face dusky brown, swollen, and of soft leathery appearance; that over chin, upper lip and nose much darker and covered with a sebaceous secretion, hard and of grayish color.

The neuritis, which was especially severe in the lower extremities, and had existed in a subacute form for some weeks, became so extreme that even the weight of the bed covering could not be borne below the knees. His legs were drawn up, resting on pillows, and ankle and wrist drop developed. At this time there was continuous flexor twitching of the fingers, and the same tendon unrest was present in the toes. The nerve trunks, especially of the lower extremities, were extremely sensitive to pressure.

Laboratory Findings: Spinal fluid and blood were negative. Urine, which showed a trace of albumin with granular and hyaline casts during the first week, became normal in ten days. Blood chemistry was normal, except the nonprotein nitrogen was a little low. Stools were positive for blood, negative for parasites, and showed four per cent fat by volume.

In view of the stress laid upon diet in the etiology of pellagra, we say here that we were unable to discover that the patient had not had a well-balanced dietary. We know, however, that he had indulged steadily in the use of alcohol for several years, that he rarely ate any breakfast, and would confine himself to only certain articles of diet at the table; but it was difficult to make out just what kind of food was especially favored or discriminated against. It was a fact, however, that when we insisted upon his taking large quantities of milk and eggs, meat and vegetables, etc., assuring a well-balanced diet, he steadily improved, and at the end of two weeks he presented every evidence of making an excellent recovery. His depression disappeared largely, as well as his irritability, and his neuritis was improving. His diarrhea ceased and he was no longer unreasonable or suffering from hallucinations. Just eighteen days after admission, when he looked most promising, he suddenly went into a chill about 2 p. m. This lasted for fully an hour, during which time he became completely exhausted, shook violently and perspired to excess. Hallucinations reappeared, his temperature was 108° at the end of the chill and pulse 150. He sank into coma and at 6 p. m. was dead. The patient's temperature had previously ranged between normal and 100, except for two days when it reached 101. The pulse had ranged between 100 and 125. The inference would be that this sudden fatal termination was due either to intercurrent pneumonia or blood stream infection.

Exhaustive autopsy studies were made on the case by Dr. A. J. Bruecken, pathologist to St. Francis Hospital. I present the following brief quotations from his report:

"This case, from the postmortem findings, is clearly one of pellagra. Whatever the immediate cause of death, it was only a terminal event. The slight degree of pneumonia with the pericarditis were only beginning lesions which in time would have been more marked. To all appearances, there was a violent terminal infection of the blood stream, which should be shown in the culture of heart's blood. However, an intense toxemia may have produced similar lesions as in the heart muscle and recti muscles without general blood stream invasion of any offending organism.

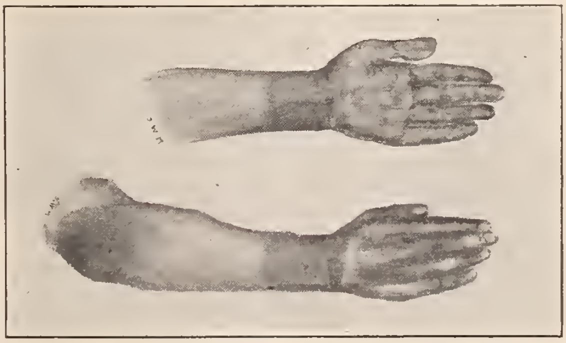

Figure No. 2.

Skin over the palmar surfaces horny and thick and less pigmented than on backs of hands. Picture shows condition clearing. Elbows show rough brown pigmented areas.

"In confirmation of the above, note that there was found, on bacteriological examination, an organism pervading the body which must have borne a direct relation to the marked reaction—hyperpyrexia, etc., before death. This reaction would seem to be of an anaphylactic nature. The bacillus itself is not a common one and is of the colon-typhoid type. It probably entered by way of the ulcerated bowel.

".....There was degeneration of the lateral columns of the spinal cord (cervical and thoracic).....acute ulcerative enteritis.....linear ulceration of ileum..... petechial and ecchymotic hemorrhages of stomach, intestinal and renal pelvis......"

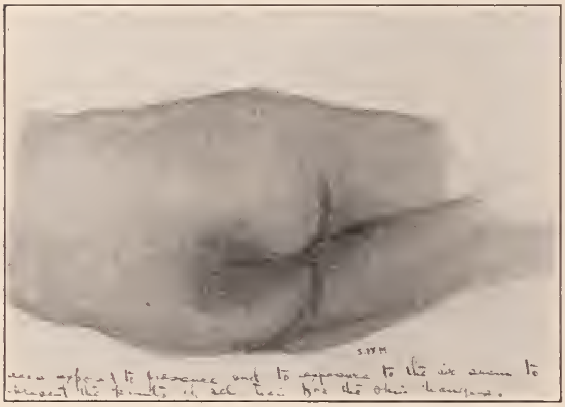

Figure No. 3.

Areas exposed to pressure and to the air seem to represent the points of selection for the skin changes. Notice area over sacrum here and elbow in another picture.

The report shows that there were widespread acute inflammatory and degenerative changes throughout the organs generally, including brain and cord.

We have in this case an example of pellagra in typical form. It presented the usual tendency to chronicity, and showed the classic affections of digestive tract, nervous system and skin. It is, of course, from the skin lesions that the diagnosis of pellagra is made. Ordinarily there appears an erythema over the backs of the hands and forearms, the dorsal surfaces of the feet, perhaps over the face, throat, and at times over other parts of the body. This appearance is followed by desquamation and hyperkeratosis, with brown pigmentation. The continued desquamation exposes a thin parchment-like dermis, beginning at the older parts of the lesions. These changes succeed one another in such manner that one may see new areas being invaded while those near by have already passed through the typically successive changes. This circumstance gives rise to the mottled appearance seen in advance cases, produced by the areas of skin returning to normal color and thinness, which lie proximal to the thickened pigmented areas. All stages of these skin lesions were classically presented in our patient. The general inflammatory condition of the mucous membrane of the entire alimentary canal existed typically.

Mental and nervous symptoms are prominent in pellagra. The most common mental symptom is depression. This, as well as the confusion and hallucinations, occur in pellagra just as in toxic-exhaustive conditions generally, and takes on no particular coloring specifically pellagrous. Graver latent mental tendencies may be precipitated by this disease, just as such tendencies may be brought out in the puerperium, especially if infection is present. Thus, at times we see dementia præcox or manic-depressive insanity appearing during the disease. No such grave manifestations occurred in our patient.

The neuritis is induced in similar fashion to the mental symptoms through the toxicity and exhaustion incident to the disease. It must be borne in mind that this case represents an aggravated type of the disease. It is not to be inferred, therefore, that cases of pellagra always manifest such a degree of mental and neuritic symptoms.

It is generally believed that pellagra occurs only in individuals who have come into proximity with the infection; the disease is notoriously prevalent in certain portions of the world. Our case, coming to light in this region, where pellagra is practically unknown, was explained by the fact that the patient had several times recently visited in South Carolina, a part of the South where pellagra is extremely prevalent, and where some of the most important studies regarding it have been made.

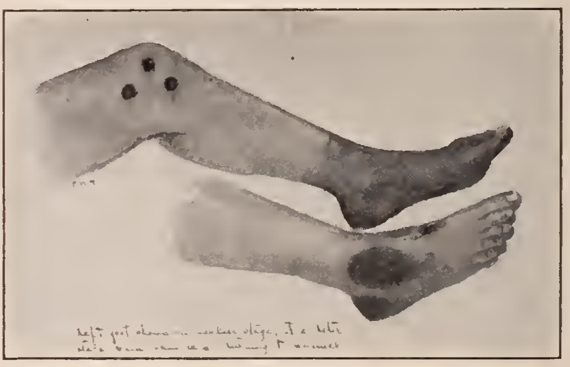

Figure No. 4.

Left foot shows an earlier stage; right, a later stage when skin was returning to normal. The three small areas over inner right knee, said to have been the first pigmented changes to occur, persisted to the end.

This case, in addition to representing the typical clinical symptoms of the disease, confirms present opinion regarding its infectious character, and by the marked improvement under a well-balanced diet, also supports the present attitude toward the nutritional features of the problem.

In this connection it may be well to note the conclusions of the Illinois State Pellagra Commission which, though made in 1911, practically represents present opinion regarding the disease.

"1. According to the weight of evidence, pellagra is a disease due to infection with a living microörganism of unknown nature.

"2. A possible location for this infection is in the intestinal tract.

"3. Deficient animal protein in the diet may constitute a predisposing factor in the contraction of the disease."*

The older theory, which associated the occurrence of the disease with eating altered maize, has been found entirely untenable.

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*Quoted from the American Journal of Medical Sciences, page 470, Macneal: Pellagra.

RELATIONSHIP OF APPENDICITIS TO UPPER ABDOMINAL DISEASE*

JOHN B. DEAVER, M.D.

PHILADELPHIA

It is a great pleasure to me to be with you this afternoon, to see the faces of many of my former students and house-doctors as well as of my friends. When I told one of my Philadelphia colleagues that I was coming here to speak on the subject of the relationship of appendicitis to upper abdominal disease he remarked, "Deaver, aren't you ever going to stop talking about the appendix? If you keep this up the coming generation will have as few appendices as they have tonsils." Whereupon I answered prayerfully, "May this be so, for then, were the hallowed Murphy to return to our midst, he would no longer find, as he found in 1915, that "the average hospital mortality rate in appendicitis of all classes is a little over 10 per cent." Procrastination has been our stumbling block; this mortality in appendicitis is too often due to delay. We cannot tell what will happen to-morrow; therefore I say, operate to-day, that is, if there is not diffused peritonitis. The latter will not occur if the cases are diagnosed early and operated early.

The misnomer, acute indigestion, treated by cleaning out the bowels, is a sinful source of late diagnosis and of diffused peritonitis. I question if failing to make a careful physical examination is not in part, if not entirely, responsible for many late diagnoses. Prescribing without examining is criminal. If I am emphasizing facts with which you are familiar, my excuse is that no one, however great his experience, can realize the potentialities of this concealed bomb in the abdomen.

In order to discuss this subject logically, it is necessary to review briefly the various means by which an infected appendix may induce upper abdominal symptoms. These may be called: (1) reflex, (2) mechanical, (3) toxic, (4) infective.

(1). *Reflex:* The gastric functions may be disordered reflexly by a lesion which is remote from the stomach itself. Two factors are necessary, first, the lesion and secondly, an increased irritability of the reflex nervous mechanism. A relatively small lesion in the appendix may set up a reflex inhibition of peristaltic waves in the cecal region, and this same irritation, which inhibits peristalsis, leads to spasm of the associated sphincter. By recalling Keith's conception of the alimentary canal, we can understand that a block may be established high up in the intestine with resulting pylorospasm, giving rise to marked gastric symptoms. I am sure your dispensaries and your offices are full of patients who came seeking relief from "dyspepsia," the underlying cause of which is a chronically inflamed appendix. I am accustomed to call the condition characterized by a furred tongue, flatulence, heartburn, with sometimes nausea and occasionally vomiting, discomfort and often pain in the epigastrium, *surgical dyspepsia* for it is usually due to organic disease of the gall-bladder, duodenum, stomach, or to what I think is still more common, a diseased appendix. The general recognition that this is the case is due to observations of the pathology of the living. Many patients who have had a gastro-enterostomy for a supposed ulcer, without relief, have subsequently been cured by appendectomy or cholecystectomy; in other words, the removal of the focus of infection which was responsible for the ulcer and not taken care of at the time of the ulcer operation. Therefore, I say in every operation in the abdomen, remove the appendix, since an empty house is better than a questionable tenant. Soltau Fenwick, many years ago, observed that certain patients with gastric hypersecretion were prone to die from appendicitis. The true explanation must certainly be that the hypersecretion was due to a chronically inflamed appendix, and if the signboard at the crossroads had been read aright the patient would have been relieved of an uncomfortable existence and saved from an untimely death.

Doubtless you have read many articles in which the surgeon states that in a series of laprotomies the appendix was found chronically diseased in a considerable percentage, but that the patients in these cases had had no appendiceal symptoms. Let me ask the writers of these articles, what are appendiceal symptoms? Is it necessary always to have pain, tenderness and rigidity in the right iliac fossa before the appendix is thought of? Moynihan has aptly called the appendix the "mimic of the upper abdomen."

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*Read at the annual meeting of the Central Pennsylvania Medical Association, Altoona, Wednesday, September 13, 1922.

(2). *Mechanical:* The mechanical effects of a chronically inflamed appendix which result in upper abdominal symptoms are due to the formation of adhesions. Periappendicular adhesions may so kink the terminal ileum as to produce the symptoms of a low-grade upper abdominal obstruction. Adhesions may also form along the ascending colon, distorting the hepatic flexure to such an extent that a low-grade obstruction is produced at this point. A "high lying" appendix may become adherent to the gall-bladder or liver, giving rise to pain in the upper right quadrant, the true etiology of which is frequently unrecognized.

A somewhat rare mechanical effect of appendiceal adhesions is hematuria as a symptom of chronic appendicitis. The hematuria and right-sided pain are misleading in making a diagnosis, but when at operation a chronically diseased appendix is found lying across and adherent over the right ureter and the removal of the appendix causes the disappearance of all urinary symptoms, there is no doubt as to the cause of the hematuria.

(3). *Toxic:* The question as to whether or not the appendix, as a site of focal infection, can give rise to bacterial toxins, setting up a toxemia, is a debatable one. To me, it is plain that toxic absorption from the inside of the appendix may be a factor in the causation of chronic hepatitis, myocarditis, chronic nephritis and damage to the mucous membrane of the stomach and intestines. Collier Martin reported one of the first cases of chronic colitis with severe diarrhea, which was due, he thought, to a chronic appendix which contained very foul smelling material.

(3)-(4). *Toxic and Infective:* It is so difficult to draw a sharp line between the toxic factor and the fourth division, the infective, that I shall discuss them together.

In a recent article by Dr. Ravdin and myself on the end results of 500 cases of chronic appendicitis, we found that in four patients complaining of hematemesis suggestive of ulcer, appendectomy relieved this symptom, no ulcer having been found at operation. Heyd and Bassler have reported similar cases. Bassler attributes the hemorrhage to a toxic erosion of the gastric mucosa. Others have ascribed this bleeding to a reflex dilatation of the vessels in the gastric mucosa with resulting diapedesis of the red cells. This explanation has probably been suggested by Moynihan's observation of the pyloric blush in cases of chronic appendicitis having gastric symptoms.

Up to this point I have been dealing largely with conditions that can be cured by appendectomy alone. I am now coming to those conditions caused by and superimposed upon a diseased appendix, acute or chronic, such as hepatitis, cholecystitis, cholangeitis, pancreatitis, gastric or duodenal ulcer. Organisms from a diseased appendix may travel to the viscera of the upper abdomen either by way of the lymphatics or the blood stream. Infection may be carried by way of the lymphatics to the gall-bladder and liver, since a definite lymphatic connection between these organs has been demonstrated. There is no necessity for the infection to attack the liver primarily because the lymphatic channels of the appendix and gall-bladder have a direct connection. However, the infection may travel by way of the venous system into the portal circulation and thence to the liver and set up a primary hepatitis. Graham of St. Louis and Reimann of Philadelphia have both shown that hepatitis is frequently the precursor of cholecystitis, the infection being carried from the liver to the gall-bladder by the very close lymphatic connection. It is but a step from inflammation of the gall-bladder to enlargement of the cystic lymph glands, periductal lymphangitis, enlargement of the glands at the head and at the margin of the pancreas and often of the regional lymph channels at the head of the pancreas. Thus, what was originally a simple appendicitis may attack the biliary apparatus and finally result in a pancreatic lymphangitis. I am becoming more and more convinced that the first stage of a chronic pancreatitis is nearly always disease of the peripancreatic lymph glands. The axiom of "once infected always infected" applies as aptly to the appendix as to the gall-bladder. Delay and neglect thus multiply the pathology, complicate the picture, and make operation more difficult and more hazardous.

Just as the gall-bladder and pancreas may become diseased from appendicitis, so also may the stomach and duodenum become the site of secondary pathology. The lymph channels of the pyloric end of the stomach and duodenum are in intimate connection with those of the biliary system and pancreas, so that by this pathway we may expect a progression of the pathology. Moreover, hematogenous embolic infection of the gastric mucosa from a diseased appendix is entirely within the realm of possibilities. I think that following this there occurs a local submucous hemorrhage, and that this plus the infection causes an anemic necrosis leading to ulceration of the gastric or duodenal mucous membrane as the necrosed tissues are digested by the gastric juice.

Microörganisms from the appendix may infect the kidneys, especially the right one, and set up a pyelitis or pyelonephritis. This occurs usually from an inflamed appendix situated high up and close to the kidney and is probably due to a local extension of the infection.

I want to impress upon you that in all of these cases when the abdomen is opened, the changes found in the appendix may be comparatively slight when we consider the end results in the upper abdomen.

The relation of acute appendicitis to the upper abdomen is of a somewhat different nature for it has to do: first, with differential diagnosis when the appendix is high; second, with the direct spread of an acute infection, and third, with pylephlebitis.

When an acutely inflamed appendix lies high in the abdomen, and is perhaps even adjacent to the under side of the liver, it is often impossible to make an exact diagnosis. It is possible, however, to say, "this is an acute surgical condition and the abdomen must be opened." It is then that the aseptic scalpel can verily dispel mystery and reveal truth. Do not think that I am advocating operation without an attempt at correct diagnosis. These cases of which I am speaking are infrequent and are in the nature of acute surgical catastrophes. The previous history may make the diagnosis easy but in a first attack of appendicitis, if the tenderness, rigidity and pain are in the upper right quadrant, there is sure to be doubt as to the diagnosis. One differentiating point can sometimes be noted. In the first stage of appendicitis, in whatever position the appendix may be, the pain, before peritoneal irritation and pain begins, is always referred to the region just below the umbilicus. This is because of the constant nerve supply of the appendix and the referred pain. While this is sometimes of aid it is apt to be overlooked, because the more severe pain accompanying peritoneal irritation obscures the earlier referred visceral pain. Perforating gastric and duodenal ulcer are usually more sudden in onset, and the typical board-like rigidity, caused by the chemical irritation of the gastric or duodenal contents, is always present. Here too, the history helps in the diagnosis.

Differentiation between a high-lying inflamed appendix and renal disease can certainly be made by the urine analysis, the cystoscope and ureteral catheterization. If the patient is not in condition for extensive examination, the examination of the urine alone will often point to the correct diagnosis.

Infection of a high-lying appendix may spread directly to other viscera of the upper abdomen. I have operated on cases of acute cholecystitis caused by direct extension of infection from a contiguous diseased appendix. The subphrenic and subhepatic regions may be infected, either through the lymphatics, which is rare, or by extension of the appendiceal infection up and along the outer side of the colon. Subphrenic abscess and particularly subhepatic abscess as complications of appendiceal abscess are not infrequent.

The liver itself becomes infected from an acutely diseased appendix, either by transmission of septic material through the portal vein or by direct transmission of bacteria along the lymphatics into the liver substance, for there is a lymphatic channel leading from Glisson's capsule into the parenchyma, in a small zone of the right lobe of the liver. Portal thrombosis and pylephlebitis are not very infrequent complications in acute appendicitis, with gangrene or infection of the meso-appendix. The infection travels from the ileocecal vein to the portal vein and here abscesses and thrombi form, the infection extending to both the spleen and the liver, where there appear many small foci of suppuration. Pylephlebitis is one of the terminations of unrecognized appendicitis. Again we see prorecognized appendicitis. Again we see procrastination spelling death.

In the early stages of chronic appendicitis, the upper abdominal symptoms are reflex in character. The pylorospasm, pain, vomiting, discomfort, even hematemesis may all be due to a nervous reflex or to the effect of toxins from the appendix on the upper intestinal tract. These same symptoms may, however, be due to organic lesions such as cholecystitis, gastric and duodenal ulcer and chronic pancreatitis which have resulted from a neglected appendiceal infection. Not only must the origin of the trouble, the appendix, be removed, but the more serious operations of treating the secondary lesions in the gall-bladder or upper intestinal tract must be undertaken. These are cases which should have received attention early, months or even years before they do. Long before a chronic upper abdominal lesion was evident the appendix had been waving its red flag and announcing its need for help. That was the time, *par excellence,* for operation.

It was with the idea of preventing needless deaths and disabilities that I choose this subject. I want again to thank you for your invitation which has given me an opportunity to elaborate on a favorite theme. The responsibility for the advanced pathology in neglected chronic and acute appendicitis rests chiefly with the general practitioner and often with the stomach specialist. If they are wide awake and imbued with the gravity of the situation they will insist on operation at the first sign of disease in the appendix. Long and bitter experience has taught us that one attack of appendicitis leads to another, and no one can assure the patient that the pathology will remain in the right iliac fossa. The varying conditions of health, the different powers of resistance to bacterial invasion and the anatomical peculiarities of the appendix in each individual, make it impossible to determine the result of infection in this organ. If I have been accused of removing normal appendices, I have at least spared a few individuals the hazards accompanying and following an inflammation of the appendix. I leave you to-day with the words of John Benjamin Murphy, when he was asked regarding the expectant treatment of appendicitis, "The expectant treatment? Expectant what? Expecting death?"

1634 Walnut Street.

STATUS OF THE PHYSICIAN IN RELATION TO THE COMPENSATION LAW*

MOSES BEHREND, M.D.

PHILADELPHIA

The subject will be considered under four titles:

1. The relation of the physician to the past and present Workmen's Compensation Law.
2. The relation of the insurance companies to the physician.
3. The relation of the hospital to the physician.
4. Constructive legislation.

1. It is a truth that when the Workmen's Compensation Law was first brought to the attention of the public and the profession there was no representative to champion the cause of the physician. The lay public seemed to understand the import of the proposed legislation and were variously represented through their attorneys at Harrisburg. The profession is still reminded by those who framed the act that the lethargy exhibited by physicians in general at that time has been greatly responsible for the failure of the compensation act in relation to the physician. However, the profession is now thoroughly aroused. There is still time to make amends for the past and to insist that at the assembling of the next legislature full justice shall be meted out.

As the old law, which prescribed a $25 and $75 limit for services performed over a period of two weeks was found inadequate, the act under which we are now working was framed. This allows $100 for hospital services and supplies and if interpreted correctly an additional $100 for the services of physician or surgeon during a period of thirty days. The construction of the paragraph relating to the physician was supposed to remedy all the shortcomings of the previous act. The writer believes the law as written covers all points, and if interpreted properly would have prevented all this needless discussion between the insurance companies and the physician. The law is plain if the words "in addition" are correctly interpreted. The carriers claim that $100 is the limit of their liability, but if read with the proper intent the limit is really $200. Some lawyers believe that as the law stands there is really no limit to the fee that may be charged. It was never intended by those in conference when the law was framed that the doctor should not be paid. At this juncture let me remind you that the queston of money is not the paramount issue in the minds of physicians and surgeons. It requires no argument to convince the public that altruism is at all times uppermost in the mind of the physician. While the great majority of physicians under whose observation these cases come are not dependent on this kind of work, there are some who would be greatly assisted by the recompense allowed.

2. The real carriers, and at the same time the real enemies of the physician, are the insurance companies. They have abrogated every trust; they have not dealt fairly with the physician or the employer or the employee. They have not dealt fairly with the physician because when they charged more for protection in 1919 at the time the new law became effective, the benefits of this increased premium should have gone to the physician. Instead it went into the coffers of the insurance companies, which declared enormous dividends as a result of the accumulated profits which should rightly have gone to the physician. This is the only reason the writer became interested in the Workmen's Compensation Law, the object being an attempt to show that the insurance companies are not giving the profession a square deal.

The employer has not been treated honorably by the insurance companies. While the employee should receive the best that the profession can produce he is relegated to an assistant or even to the resident physician. This often has the effect of treatment being delayed with the consequence that the employee is not returned to his employer as quickly as he should be.

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*Read at the Northern Medical Association, Philadelphia.

The employee is being deceived very often because, under the present condition of avarice practiced by the insurance company, the best medical and surgical treatment is not always forthcoming. As long as the physician knows that someone else is pocketing the money that he should justly receive he probably does not evince the highest interest in the case.

It has come to our notice that some physicians employed by some of the insurance companies have not been the best, that they are not experts in their line of work. This is just neither to the employer, the employee nor the medical profession. There is also a pernicious practice among the carriers of deducting a varying amount of the physician's bill rendered, which at the end of the year amounts to quite a large sum. In several instances a deduction of two dollars was made on a bill of twelve dollars. The companies will go the limit to mulct the physician, placing on their checks "for account in full." This, if accepted, while not lawful, causes considerable trouble if the physician attempts to collect the balance. Many other examples of the high-handed methods of these carriers could be given but these should suffice to illustrate the fact that the profession is not getting a square deal.

3. As regards the relation of the hospital to the physician, a great deal of missionary work must be performed here. It is a well-known fact that many of the differences between the physician and the hospital originated from a ruling made by the superintendent of one of our hospitals. Some hospitals, insurance companies and others fail to realize that a new class of patients has been established; that these industrial cases are really private in character, and therefore should receive the same attention as private patients would receive. Patients who come under the Workmen's Compensation Law are not ward patients and cannot be put in the same category. The mere fact that the hospital charges for the use of the operating room, x-rays, tetanus antitoxin and other special drugs, places these cases in a special class. No such charges are made for ward cases.

Another hindrance to the physician in obtaining justice is the lack of uniformity of the hospitals in dealing with compensation cases. In a survey conducted under the auspices of the Philadelphia County Medical Society, it was found that one-half of the hospitals allowed the physician to send a bill and the other half refused this request. Either the latter send a bill for the physician's services plus the hospital expenses or the insurance companies keep the fee which properly belongs to the surgeon.

After Mr. Mackey gave his opinion confirming the findings of referee Seidel, the insurance companies refused to pay surgeons attending hospitals. The opinion handed down ruled that physicians connected with hospitals are not entitled to a fee. The opinion of Mr. Mackey is considered by all physicians, as well as some lawyers, as not in keeping with the wording of the law. At the meeting of the Medical Society of the State of Pennsylvania, held in Scranton last October, the physicians were unanimous in condemning what seemed to them an unjust reading of the law. One word from the chairman of the board would have changed the policy of the hospitals and insurance companies. A paragraph from the opinion of Mr. Mackey reads as follows: "It does not occur to us that the legislature intended that when an employer placed an injured employee in a hospital he becomes liable not only for the hospital charges but for individual bills for professional services from one or more members of the hospital staff who happened to be on duty at that time and who administered to the patient not by virtue of a contract but by assignment or rule of the hospital." It is evident that Mr. Mackey and many others do not realize that these industrial cases, as stated before, have created a new class of cases. We differ also in the opinion that there is really an implied contract which, according to the law, entitles the physician to his fee.

At Pottsville we lost the appeal from Mr. Mackey's decision on a technicality. Under the law a physician has no right to bring suit. This is up to the employee alone. In this instance Dr. Householder, of Pottsville, sued because he could not persuade the employee to do so. This shows another weakness in the law which must be corrected.

4. Under the leadership of Dr. George A. Knowles, chairman of the Medical Legislative Conference, we hope to obtain some changes in the present amendment by which the physician will be benefited. The propositions, which we expect to present to the legislature which meets in 1923 will be the elimination of the thirty day limit which has proved to be entirely inadequate for the average hospital case. At the present

time $100 is supposed to be the limit to cover the expenses of the hospital and the surgeon's fee. We will endeavor to have the amended law read that $200 shall be the limit of the surgeon's fee and $200 shall be the limit for hospital expenses. The law must also state specifically the amount to be allotted to the surgeon and the hospital respectively so that there can be absolutely no misunderstanding. Another weak point in the law is the inability of the surgeon to be a "party in interest" in a suit. In order that the surgeon may collect his fee it is necessary to have the employee bring suit. The many difficulties and complications that may arise from such a procedure must be plain to all. The insurance company often stands with a club, so to speak, over the head of the employer and employee to prevent the employee from signing the papers. In the law to be amended we want the physician to have his rights protected so that he can bring suit in case a disagreement arises.

Finally, it is a deplorable state of affairs when politics is mixed with medicine. The influence that politics exerts is not a savory one. There always exists in relationships of this kind a tendency to favor someone; whereas in matters of such tremendous importance, where life is often in the balance, strict neutrality should be the rule.

In conclusion, it should be the duty of every physician to appoint himself a committee of one to inform the senators and representatives of his district as to their desires concerning the proposed amendments to the Workmen's Compensation Law. He should also awaken the employer and the employee to a full realization of the facts that they are not getting all they should have, on account of the dishonesty, parsimoniousness and high-handed methods of the insurance companies. The physician must impress on the hospitals and the insurance companies and others that the industrial cases are really private cases; that on account of the law the status of the industrial worker has been changed. We believe that the establishment of an industrial ward in large hospitals will help to solve one of our many problems.

1738 Pine Street.

Dr. O. Pine queries: Will some medical educator of means offer prizes to stimulate correct pronunciation of medical terms commonly mispronounced by readers of medical papers?

Dr. O. Pine queries: Has it ever occurred to you that a very good way to eliminate quackery would be to be so assiduous and efficient in our work as to make the public forget even the very existence of quacks?

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

CONGENITAL OBSTRUCTION OF BOWEL

Case Report

DR. H. C. FLOOD

Baby, full term with a negative family history, was delivered at the West Penn Hospital, weighing seven pounds two ounces, and apparently in normal condition. A few hours after birth it was noticed that the baby was quite markedly distended. A small amount of glucose solution on the first day was promptly vomited. No meconium was passed during the first twenty-four hours, despite an initial dose of castor oil. The distention became more marked and there was complete absence of stool. Vomiting became more pronounced and projectile in character. Visible peristaltic waves were seen over the entire abdomen. Rectal examination disclosed nothing abnormal. A diagnosis of probable obstruction of bowel due to congenital lesion, either an atresia or stenosis, was made.

Thirty hours after birth under local anesthesia, Dr. Stewart opened the abdomen in the lower right quadrant. An obstruction was found in the region of the ileocecal valve. The intestine was firm and hard under palpating finger. Gut was opened about ten inches from the ileocecal junction. The interior of intestine was filled with dark, thick, gelatinous material, which was gently expressed and washed out with salt solution, the opening was brought up and stitched flush with the peritoneum.

Following the operation the infant reacted badly. For forty-eight hours the distention of abdomen was more marked, and general condition of infant was grave. The gelatinous material continued to be extruded through the artificial anus for three days after operation. Breast milk feeding was instituted with medicine dropper in the first 24 hours and retained, and on the third day the child's condition had improved to such an extent that the infant was put to the breast and nursed normally. Fecal contents were expelled through the opening. Five days later fecal contents began to be expelled from the rectum and also through the artificial anus.

On the fifteenth day following operation the wound closed down, and was completely healed twenty-five days after operation. Infant was discharged from hospital, gaining in weight, and in apparent good health. Unfortunately at four and a half months the infant contracted whooping cough and died of a bronchopneumonia.

A CASE OF HENOCH'S PURPURA COMPLICATED BY INTESTINAL OBSTRUCTION.

DR. H. H. DONALDSON

Male, aged eleven years. Previous medical history unimportant.

Illness began about August 20, 1922, with pains in lower extremities soon followed by purpuric eruption widely scattered over the trunk and extremities. A few days later he began to suffer with severe, spasmodic abdominal pain. There was slight distension at first which gradually increased. At this time there was some difficulty to get the bowels moved and there was some bright red blood in the stool. Patient was seen when he had been ill about two weeks and appeared to be suffering from Henoch's purpura with the characteristic abdominal pain. During the following eight weeks the child suffered severe periodic pain in the abdomen with gradually increasing obstruction of the bowels. The blood in the stool disappeared but the stool contained a great deal of mucus and at times casts of the bowel. He was given many enemas daily and was relieved temporarily after his bowels were moved. The distension of the abdomen increased and during the attacks of pain outlines of coils of small intestine could be seen.

Operation revealed the obstruction in the ileum about five feet from the ileocecal valve. The bowel was narrowed and thickened at one level only and involved about ½ inch longitudinally.

There was no pathology outside the bowel and no evidence of a Meckel's diverticulum. The bowel was almost completely obstructed. A lateral anastomosis was done and the obstruction portion left undisturbed. The patient is making a good recovery.

This case is of special interest only because the obstruction apparently had its origin during the active stage of Henoch's purpura. Since hemorrhage into the wall of the bowel is known to occur in this disease, it seems probable that an unusually large hemorrhage occurred at this point and resulted in connective tissue formation and gradually increasing obstruction.

REPORT OF CASE OF CARCINOMA OF THE SCAPULA

DR. C. W. W. ELKIN

Mr. F. S., aged 45, an inspector of railroad cars by trade. In March, 1922, six months previous to his admission to the hospital, the patient began to cough, with some bloody expectoration. Examination at the time of admission to the hospital showed an adult male with a general appearance of definite anemia and loss of weight. The chest showed a lagging of the right shoulder during inspiration, decrease in the vocal fremitus, dullness from the apex to the level of the middle of the scapula with a tubular quality to the breath sounds in this area. At this time there was no note of any limitation of shoulder movement and no evidence of any external involvement of the tissues about the shoulder. Blood examination showed R. B. C. 3,020,000, W. B. C. 17,320, Hb. 55%, with a relative increase of the polymorphonuclears. X-ray examination revealed a very dense shadow in the upper two-thirds of the posterior portion of the right lung. In his report Dr. W. B. Ray considered this shadow as due to a new growth. Examination two weeks later (October 4, 1922), showed the density of the mass to be about the same but with extension in the anterior and lower directions almost filling the upper part of the chest cavity. About two weeks after admission to the hospital (October 6, 1922) there was noticed a bulging over the right scapula in its supraspinous portion, which increased in size quite rapidly but with only slight pain or tenderness. This swelling was fairly firm but showed no evidence of inflammation. Incision and examination of the mass showed it to be intimately connected with the scapula. Dr. Goodpasture examined the portion of the mass sent to the Singer Laboratory and reported "a malignant tumor invading and destroying muscle and a fragment of bone. The tumor was a very difficult one to classify, the cells varied greatly in size and general characteristics.....The tendency to form giant cells was very marked. Mitotic figures.....were frequent." Dr. Goodpasture felt that the tumor was a carcinoma but its origin was uncertain.

X-ray examinations of the chest and abdomen made at intervals of one to two weeks show the mass in the right chest as gradually increasing in size until at the present time it fills the upper two-thirds of the right pleural cavity. Over this involved area the physical signs are absence of vocal fremitus and resonance and the breath sounds are definitely decreased.

Ten days after the patient's admission to the hospital (October 30, 1922) it was noted that the left kidney was apparently enlarged and somewhat tender. Roentgenogram showed a large dense mass in the region of this kidney. Dr. Burt (October 19, 1922) reported the prostate as normal in size and consistency, free and not tender.

X-ray of ribs, humeri and pelvic bones did not reveal any apparent metastases. X-ray examination of the gastro-intestinal tract was negative except for a gastroptosis and enlarged liver. By fractional gastric analysis after an Ewald test meal the free hydrochloric acid was found to be absent and the total acidity low. The hemoglobin has continued to drop and is now 35% (Sahli). The R. B. C. 3,376,000, and W. B. C. 16,800.

The question naturally arises as to the origin of the carcinoma of the scapula. One of the most common sources of metastases to the bones is carcinoma of the prostate. In this case the prostate was reported as normal. It should be remembered, however, that as McCallum has shown, the prostate may contain malignant nodules that are only demonstrable on section of the gland. The most probable source of the metastasis is a hypernephroma. Hypernephromata may arise in the adrenal bodies, from adrenal rests in the kidneys and elsewhere, or from kidney tissue itself. These tumors are quite variable in the type of cell present, resembling carcinomata, connective tissue tumors or even nervous tissue tumors. In view of the rather atypical type of cell found in the scapular mass, the hypernephroma is a most probable rim growth. Accepting this view, a metastasis to the lung would explain the mass in that organ. This metastasis must have been very early as symptoms were referable to the lung before other symptoms were present.

CARCINOMA OF THE BREAST

DR. JOHN B. DIXON

Jacobson, in 1919, reported on 1,866 cases traced from 3,462 operated upon. Thirty-two per cent were well at the end of three years, 23% well at the end of five years. Buchanan reports 38% well at the end of three years, 23% well at the end of five years. Mayo clinic reports on 218 cases, 36% alive from 5 to 8 years after operation. Deaver reports on 506 cases, 34% living at the end of three years, 26% living at the end of five years. Certainly these are not results of which one need be proud.

It seems that if the present results are to be improved it must be done by the aid of radium and x-ray.

Deelman (Amsterdam) had 30% living at the end of five years before systematic raying of his patients; after systematic raying 42% (*Jr. A. M. A.*, 1919). Mayos ray their patients every three weeks for eight or ten times and use radium every six weeks till there is no sign of recurrence (*Mayo Clinics*, 920). Mr.

Reginald Morton (*Brit. Med. Jrnl.*, 1-29-21, p. 172) reports seeing remarkable results at the Frauenklinik at Erlangen, where the dose of radiation is definitely measured. He says, "In the year 1918, 24 cases of uterine cancer with more or less involvement of the paramenia were treated with the x-ray alone. At the present moment (1921) 20 of these are well and leading normal lives, being at least clinically cured. Seventy-five per cent of mammary cancers treated in 1917 by the x-rays alone are now clinically cured."

The next most hopeful means of improving results is earlier operation. Early operation before there are any signs of metastasis is the ideal operation. Deaver says that 25% of the patients presenting themselves for examination are inoperable. Palpable axillary glands give a grave prognosis and the nearer the apex of the axilla the more serious. All palpable axillary glands are not necessarily due to metastasis, so that it is not possible to give a prognosis from examination alone. Sistrunk reports 65% of the patients (218) without glandular involvement alive at the end of five years, while only 21.9% with glandular involvement were alive at the end of five years.

A third means of improving results is by the after cure of these patients, at present very largely neglected. They should be put out in the sunlight and fresh air, given the most nourishing food possible and everything should be done to increase the resistance of the patient. It is the same problem that the tubercular patient has to face and is won or lost in the same manner.

Operability: Palpable axillary glands give a grave prognosis. The nearer they approach the apex of the axilla the more grave the prognosis. Palpable axillary glands, however, may be inflammatory, so that it is impossible to determine from this alone whether a case is operable or not.

Involvement of the cervical glands is much more significant. While Halstead reports 7% of three-year cures with cervical involvement, this is better than the experience of most operators. Judd feels that a patient with cervical involvement will live longer and more comfortably without operation. Tumor fixed to the chest-wall certainly constitutes an inoperable case, but one adherent to the skin is not necessarily so unless it is ulcerated. If there is any question of the extent of metastasis an x-ray of the mediastinum should be taken.

Finally old scirrhous cases of 10-20 years' duration in old women may be lighted up by any operative procedure and markedly hasten the end.

Operation: There is a consensus of opinion on the main features of the operation. The skin incision, since Handley has demonstrated that the lymphatics are carried in the fascia and not in the skin, should not be too wide. Remove the skin about two inches to either side of the center of the growth. Undermine the skin well to the middle of the sternum. Remove both pectoral muscles, not only because it makes possible a more thorough dissection, but also because it has been demonstrated that metastasis may occur in the muscle. Carry out the dissection from the axilla down as advised by Willey Meyer and thus block off the lymphatics before handling the growth. These cases should be handled with the same care as to gloves, pads and instruments, as one would handle an infected case.

Frozen sections should be made where the diagnosis is not well established, but the growth for sections should be removed preferably with the cautery. The dissection of the axilla is done more thoroughly by doing it subfascially. This is pretty difficult in most cases in the apex of the axilla, but as soon as one is below the vessels the fascia can readily be stripped off of the serratus, subclavius and latissimus. Most postoperative crippling and discomfort can be avoided by keeping the arm at a little better than a right angle to the body until healing is well established and encouraging early use of the arm.

TUMORS OF THE HYPOPHYSIS

DR. B. A. COHOE

In November, 1919, a patient, Mrs. S., aged 59, was referred by Dr. Jennings, with a history of gradually failing vision present for about one year. The eye examination made by Dr. Jennings a few days previous had revealed a bitemporal hemianopsia with constriction of the visual fields. In February of the same year the patient had previously consulted an oculist, at which time no abnormality had been noted in the visual fields. Apart from the ocular findings the physical examination was negative except for the presence of a moderate hypertension and periapical abscesses in a few teeth.

Since the ocular findings pointed fairly definitely to a lesion of the optic chiasm, probably due to pressure from an abnormal hypophysis, a radiogram of the sella turcica was taken. The sella was reported as normal but with a qualifying comment that it looked a trifle queer. The dental radiograms showed a number of periapical abscesses, and the patient had five teeth extracted without any improvement in the condition of the vision. A few months later, although the general condition remained good the visual acuity became progressively less, and it was decided to send the patient to Baltimore for diagnostic study.

In December, 1920, as a result of this survey, Dr. Parker reported (1) a bilateral partial optic atrophy with amblyopia, bitemporal hemianopsia, and constriction of the nasal field pointing definitely to a lesion of the optic chiasm; (2) abnormal sellar and sphenoidal sinus shadows in the x-ray, probably a mass either inflammatory or neoplastic.

The patient returned home and a month later was sent to Dr. Cushing for operation.

This was a simple, quick operation, septum being removed without delay or difficulty. Anterior wall of the sphenoidal cells had been completely absorbed and there was a bulging mass disclosed when the cells were approached. The prow of the vomer had undergone considerable absorption and was removed. A great mass of tumor filling the sphenoidal cells was very thoroughly curetted and cleaned. (Immediate examination of tissue by Dr. Bailey). The floor of the sella was completely destroyed and the remnants of mucous membrane and dura encountered. A very thorough and radical removal of tumor was accomplished without difficulty. It was soft and easily spooned away. A small amount of Zenker's fixative was used on the raw surface, pocket was thoroughly washed and irrigated and small puncture was made into the pharynx for possible drainage if necessary.

The patient was next seen about one month following the operation. At this time, after the great postoperative improvement in vision, she stated that her vision was again failing. The right eye showed 20/100 and the left 20/40. The hemianopsia appeared much less. During the spring of 1921 she was given radium treatment by Dr. Boggs. This was kept up for some time but the patient thought that she felt worse following this treatment and was unwilling to continue it. She was then given pituitary extract (anterior lobe) for some time but derived no material benefit from its use.

When last seen about a month ago the general condition of the patient was good; vision about the same. The double vision and throbbing of temporal region had subsided. There was no evidence of glandular manifestations in the nature of hypofunction of the gland.

In this patient an adenoma of the pituitary progressed to the stage of rupture of the floor of the sella and invasion of the sphenoidal cells, and afforded the only positive signs of its presence in the domain of the ocular field and in the abdominal sellar radiogram, on which evidence the diagnosis was made. The case belongs to the group of patients with pituitary lesions in which the local pressure effects of the mass on neighborhood structures are so striking as to render inconspicuous the signs of any functional involvement of the gland.

The hypophysis, sometimes called the stow-a-way gland, consists of the lobus anterior composed of the pars anterior propria and pars intermedia, and the lobus posterior comprising the infundibulum and pars nervosa. In adult males and nulliparæ the gland weighs about 65 cgms., is oval in shape, 1 cm. long, 1½ cm. broad and ½ cm. thick. During pregnancy it increases greatly in size.

The two lobes are readily distinguished in the gross. The anterior is the larger and firmer and has a reddish tint due to its great vascularity. It is developed from the ectodermal pouch (pouch of Rathke). Histologically it consists for the most part of epithelial cells arranged in clusters and columns of two main types, the chromophil cells which stain deeply and the chromophobe cells which remain clear. Physiologically the anterior lobe is believed to produce an internal secretion which has to do with the growth of bone and also with the stimulation of that endocrine function of the gonads which is concerned with the development of secondary sexual characteristics. Total removal of the anterior lobe causes death and it is therefore believed that it produces a secretion which is indispensable to life.

The pars intermedia is a thin epithelial layer lying between the anterior lobe proper and the posterior lobe. A loss or diminution of function of this part of the gland is believed to result in diabetes insipidus.

The posterior lobe, or pars nervosa, is the smaller of the two lobes and is less vascular and often of a greenish color. Embryologically it is formed as a differentiation of the infundibular process of the hypothalamus. It consists chiefly of neuroglia fibres with a few scattered neuroglia cells. True nerve cells are absent. There is no anatomical indication of a secretion being formed by the posterior lobe, yet physiologists claim that there are at least two active principles. Normal posterior lobe function is essential to effective carbohydrate metabolism.

The Symptomatology: This comprises: (1) Neighborhood symptoms, giving rise to subjective discomfort, prominent among which are headache—the so-called pituitary headache—usually bitemporal and persistent, regarded as due to a distention of the glandular envelope. Other symptoms are photophobia, transient attacks of diplopia, anosmia which may be complete or partial, trigeminal neuralgias, uncinate gyrus seizures with gustatory or olfactory aura if the mass presses upon the uncinate gyrus, nasopharyngeal signs such as epistaxis, or a rhinorrhea with an intermittent discharge of mucus. (Patients with this symptom are frequently treated for long periods for supposed primary sinus disease.)

(2) Deformities in the sella turcica. According to Keith the normal adult sella averages 10-12 mm. anteroposteriorly, 14-15 mm. transversely, and 8 mm. in depth. The deformity may consist of thickening of the clinoid process and dorsum, or of thinning from pressure absorption of these parts, or of more or less destruction of all outlines. In Cushing's opinion, a profile radiographic measurement exceeding 15 mm. anteroposteriorly and 10 mm. in depth may be regarded as an enlargement. He emphasizes the fact that repeated exposures are necessary and that stereoscopic plates are absolutely essential in arriving at an opinion concerning sellar deformities.

(3) Ocular symptoms, perhaps the most important of all neighborhood signs, consist of a bilateral optic atrophy and temporal hemianopsia. The usual direction of growth of pituitary tumors is first upward towards the intracranial chamber and thence forward, pressing on the under surface of the optic chiasm and interfering with the ventral crossed fasciculus which supplies the lower nasal retina, producing a visual defect in both upper temporal quadrants. Further extension causes pressure in both ventral and dorsal crossed fasciculi resulting in a more complete temporal hemianopsia. While a bitemporal hemianopsia is the common finding, Cushing insists that nearly half the cases of pituitary tumor show an equally definite homonymous hemianopsia. Rarely are the two eyes affected in equal degree. Contraction of the visual fields is the rule, and the color fields show an earlier defect than the form fields, a point of early diagnostic significance.

(4) Glandular symptoms: These may be variable, depending upon the state of activity of the glands. Some cases present signs of hyperactivity, others of hypoactivity, and still others of a blending of the two states. When a condition of hyperpituitarism is present at the onset, the end result in every instance will probably be a condition of hypopituitarism.

If hyperpituitarism is present there may be skeletal overgrowth, cutaneous and subcutaneous changes in the line of hypertrichosis, greasy and moist skin. With hypopituitarism the skin is usually moderately dry and smooth, shows fine wrinkling, and the axillary and pubic hair becomes scanty. The nails may become small and thin and show an absence of crescents at the base. Patients may be either fat or thin. An insufficiency of the posterior lobe is believed to give a symptom complex of obesity, high sugar tolerance, subnormal temperature, slow pulse, asthenia and drowsiness.

Treatment: The treatment of pituitary tumors consists in surgical removal, radiotherapy, radium emanations, or glandular therapy. Up to the present time surgical intervention, though by no means brilliant, has proved the most efficacious form of treatment. Surgically the most important considerations are the immediate danger of operation, the improvement to be expected, and the duration of the improvement. Cushing's records of 154 cases up to June, 1922, show an operative mortality of 10.2% for all forms of operation, and 13.2% if all cases dying sooner or later are counted. He believes that the mortality should be reduced to 5%. In all of his cases the vision was greatly improved in 50%, fairly improved in 20%, and unimproved in 20%. Unoperated cases become blind in two years and die in another like period. Operation may provide good vision lasting from 5 to 10 years. The only certain way of checking up the surgical result in Cushing's opinion, is examination of the visual fields.

The advocates of radiotherapy urge that the attempts at operative removal of the tumors show a very high mortality, and that recurrences are very common. They claim that the x-ray cautiously used is not dangerous and usually gives good results, and are of the opinion that surgery should be preferred only when results cannot be obtained with the x-ray.

Radium has also been employed and by some is claimed to yield better results than x-ray. Cushing advises its use, when properly administered by nose and throat specialists by placing the radium tubes in the sphenoidal cells.

Other writers have reported improvement by means of glandular therapy, combined in some instances with mercurial treatment and radiotherapy, in a few cases reporting restoration of vision after blindness of several months' duration.

Frederick B. Utley, M.D., Secretary.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

November 13, 1922

Dr. E. B. Heckel, President

DESCEMETITIS VASCULOSA SPECIFICA

Dr. Jos. E. Willetts exhibited the case of Mrs. A., aged 25, married, white; weight, 95 pounds; no children, one miscarriage. No previous eye trouble. Patient first seen July 27, 1922. Eye symptoms were those of an acute conjunctivitis: conjunctiva injected; lacrimation, with some coryza; cornea clear; no increased tension. Patient was given cargentos, grs. 15 to oz. ½, and told to return in three days.

On July 30th, all symptoms were accentuated. There were excessive lacrimation, photophobia, dimness of vision; no conjunctival secretion; anterior chamber deepened; no increased tension; pupils about normal. Epithelial layer and lamellæ of the cornea were clear and unaffected. On the posterior surface of the cornea of the left eye, the membrane of Descemet was covered with long striated erosions, extending from the lower limbus to the upper margin of the pupil. They were in no sense deposits and were not in the lamellæ. I cannot describe their appearance any better than by comparing them to the marks left on the ground during the early spring rain when the angleworms come out of the ground and leave the mark of their trail. The center was more or less clean, but the edges were ragged, more opaque and slightly thickened.

Following these, at the extreme lower limbus, posterior to the lamellæ of the cornea, there was a wall of minute penicillate capillaries so dense and so uniform in caliber and length that their ending would correspond to a horizonal line. This uniformity was maintained until they reached the median line of the cornea, some two months later. At this period, some of the uniformity was lost, the smaller capillaries fading out while others increased in caliber, extended and began to branch and later to anastomose, so that the uniformity of the horizontal endings was lost. I wish to lay particular stress on the horizontal, level ending of this vascularization, because it was unlike anything I had ever seen before, and because I can in no way account for such an arrangement on a concave surface. A concentric or a fan-shaped formation would not be unusual. In the beginning and later, they could easily have been mistaken for a drop of fresh blood lying in the anterior chamber, their endings being so identical at this time. I excluded, in my diagnosis, gumma of the ciliary body, because there was no disturbance of contour; also parenchymatous keratitis, because the lamellæ were in no may involved; and iridocyclitis, because there was no pain or exudate.

I prescribed 1/16 gr. of mercury bichlorid and about 3½ grs. of potassium iodid, t.i.d., and atropin, 2 grs. to the ounce, to be dropped in the eyes t.i.d. On August 4th, with condition unchanged, patient was referred to Dr. Ernest Willetts for a Wassermann test, which was reported very strongly positive. X-ray of teeth showed three slight areas of infection. The biniodid of mercury was continued until August 21st. The vascularization, lacrimation and dimness of vision had gradually increased. The pathology was still confined to the membrane of Descemet. There was no exudate in the anterior chamber, no iritis or cyclitis, no disturbance of the lamella, and no pain or increased tension. Since she had taken internally four grains of bichlorid and about 180 grains of iodid with no improvement, she was referred to Dr. Willetts and was given 5 grams of neoarsphenamin intravenously. Another 6-gram dose was given two days later; a third injection of 6 grams was given two days after this; and a fourth one of 6 grams on August 28th. During these seven days, the biniodid was not given. There was absolutely no improvement perceptible from these injections. She was put back on the 1/16th gr. of biniodid, four times daily, until about September 6th, when I left the city, and the patient was turned over to Dr. H. H. Turner.

I think Dr. Turner can verify the horizontal alignment of the vessels, as it was maintained up to this time and later. There seemed to be some slight clearing of the opacity peripherally at this time. Dr. Turner thought, on account of the excessive lacrimation, that atropin in an ointment base would be better, and prescribed it in that form. He also withdrew the bichlorid and administered four grains of hydrargyri cum creta with iodid of potassium, 15 grs., t.i.d., increasing the latter 1 gr. a day. On my return, September 20th, I found some slight peripheral improvement. I sent the patient to the pathologist for another Wassermann test, report of which came back "Very strongly positive." On September 23d I put her back on 1/16th gr. bichlorid and atropin in solution, but continued the potassium iodid. I also ordered mercurial inunctions and another injection of 6 grams of neoarsphenamin, which was given on September 23d. She was given another 6 grams on September 26th.

Symptoms of salivation occurred about this time and the inunctions of mercury were withdrawn. The bichlorid was diminished to one dose per day until symptoms of salivation disappeared. About this time, she also complained of dryness in the throat and the atropin was withdrawn for four days. There was slow, but steady improvement. On October 2d, she was again given 6 grams of neoarsphenamin intravenously, and another 6 grams on October 7th, making eight injections in all. About this time an eruption began to appear from the prolonged use of iodin, which I did not withdraw, but reduced one drop a day until she was taking 12 drops, and then again increased until she is now taking 23 drops t.i.d.

At present, November 9th, the left eye is quiet; she can count fingers at 15 feet. Remains of some of the larger vessels beginning below the scleral margin at the inferior limbus and extending up over the membrane of Descemet, can be plainly seen.

In this patient I believe that vascularization was dependent upon the localized invasion of the spirochetae upon the membrane of Descemet and was maintained in and confined to the membrane throughout the entire course of the disease. The involvement of the right eye, which began simultaneously with that of the left, has been more severe. While the formation of the vascularization was the same, it was more pronounced, slower to progress and slower in responding to treatment. The opacity was dimmer and just now, on November 9th, is beginning to clear peripherally. When patient was last seen, there was slightly increased tension, without pain, and the mydriatic was discontinued. She is now taking, in addition to the other treatment, cod liver oil, and later will receive tincture of iron with bichlorid of mercury, which I shall continue after a negative Wassermann. She has taken internally approximately 4 ozs. of iodid of potassium and 26 grs. of mercury bichlorid, which was pushed to the point of salivation, has had 47 grams of neoarsphenamin intravenously, and has had mercurial inunctions in both axillae and both popliteal spaces for two weeks. Notwithstanding this aggressive treatment, report of a Wassermann received this morning, November 13th, is "very strongly positive."

We are familiar with the condition described in the textbooks as descemetitis, in which the posterior surface of the cornea is dotted with small opaque bodies generally arranged in pyramidal form. This is in no sense of the word a descemetitis, but only an edematous condition of the epithelial layer of the membrane of Descemet. Textbook writers persist in calling this condition descemetitis, when the principal diagnostic sign is admitted to be a deposit of an exudate from an adjacent inflamed organ, primarily the Collins gland in the ciliary body. Descemet's membrane itself presents no clinical picture or distinctive sign of an individual inflammation. Histologically unlike Bowman's membrane, which is not a membrane but simply a condensation of the lamellæ of the cornea which cannot possibly suffer invasion independent of all the corneal structure, the membrane of Descemet, being a separate membrane, is histologically open to individual attack independent of corneal parenchymatous involvement.

In this patient, I believe that the inflammation originated, was maintained in and confined to the membrane of Descemet, and from conclusions formed from observing its beginning and course, I am classifying it as descemetitis vasculosa. Just why this patient should have departed from the classical type of ocular inflammation known as interstitial keratitis, so common in specific heredity, I am not prepared to say; and, considering the similarity between Descemet's membrane and the vitreous membrane of the choroid, with which it is continuous through the ligamentum pectinatum, I am unable to understand, in view of the prolonged violent inflammation, why there was no active involvement of the choroid, ciliary body, iris or lamella of the cornea.

DISCUSSION

Dr. Krebs thought the case an atypical form of interstitial keratitis and that the vascularization of the cornea is not in or upon Descemet's membrane. He thought tuberculosis might be a factor in the condition and suggested the diagnostic use of tuberculin.

Dr. Koch thought the case one of interstitial keratitis occurring later in life than usual.

Dr. Stieren believed the vascularization to be not deep in the cornea, but anterior and just beneath Bowman's membrane. He raised the question of the relative therapeutic value in interstitial keratitis of intravenous administration of arsphenamin and bichlorid of mercury given by mouth. He believes in the latter, pushed rapidly to the point of intolerance and sees no advantage in intravenous medication in this condition.

Dr. Heckel does not give potassium iodid in these cases, but relies on bichlorid of mercury by mouth, a convenient prescription for regulating the dosage by drops being hydrargyri chloridi corrosivi, gr. 2, sodii chloridi, grs. 3 to 5, aquae q. s. ad. fl. ozs. 3. He thought this case one of parenchymatous keratitis.

Dr. Krebs uses syrup of the iodid of iron in addition to bichlorid of mercury and has the urine examined frequently as an index of mercury tolerance.

Dr. Turner thinks now that the case is an atypical one of interstitial keratitis. When he first saw the patient for Dr. Willetts, the condition of the cornea looked somewhat like pannus carnosus. The corneal vessels came up from a point well down in the cornea and radiated in arborescent fashion from limbus to limbus.

Dr. Willetts, in closing, stressed again the horizontal alignment of the vascularization at its inception. Clearing of the corneæ has been in sections, the peripheral portions being the first to clear.

UNILATERAL PROPTOSIS DUE TO ABSCESS OF THE FRONTAL LOBE OF BRAIN

Dr. Edward A. Weisser reported the case of J. L., white, male, aged 9, admitted to St. Francis Hospital on October 9, 1922. Three weeks previously he was hit over the left eye with a good-sized stone. Three days later left eye became swollen and painful. Later the swelling subsided and the pain became less severe.

On admission to the hospital, the child was restless and irritable, but the mentality was not affected. There was no rigidity, no Kernig. On account of the absence of meningitis, lumbar puncture was thought unnecessary.

Examination of eyes showed right eye to be normal in all respects. Left eye: cornea was clear; pupil 6 mm., reacted slightly to light; markedly proptosed; all extra-ocular movements were very much limited, more particularly outwardly. On October 14th, in early morning, patient had fifteen convulsive seizures over a period of thirty minutes, consisting of marked spastic, jerky movements of the left arm, nystagmus of each eye, internal rotation of right eye, left eye fixed in median line, lower extremities apparently unaffected during attack. The attacks lasted from 30 to 60 seconds. During and between attacks patient was unconscious. An exploratory lumbar puncture was made, which showed spinal fluid greatly increased in pressure, but no turbidity; 15 c.c. were withdrawn. Convulsive seizures afterwards became increased and involved the lower extremities. Examination of the spinal fluid showed a count of 49 cells, with a preponderance of large mononuclears; globulin content, plus; Wassermann negative. There was no growth in culture of spinal fluid in 48 hours. White blood count on October 12th was 9,780; on October 14th, 16,250; on October 30th, 61,500.

Patient had frontal headaches frequently and complained of these chiefly in the morning. On October 29th he complained of frontal headache and pain in neck; no stiffness, Kernig sign quite suggestive. Patient was stuporous and appeared delirious at times. His temperature ran from 100 to 102, gradually rising, and once went to 104. Pulse rate was not in proportion to height of temperature. X-ray of patient's head showed absence of frontal sinuses.

Dr. Geo. J. Wright saw patient on October 30th, and suggested the possibility of an abscess in the frontal lobe. On October 31st, Dr. Homer McCready made an exploratory operation of the frontal sinuses, but found nothing. He went through the skull and found a large abscess about the size of an orange in the frontal lobe of the brain, from which one cup of pus was obtained. The eyeball receded, but the patient kept getting worse after operation and died on November 5th.

UNUSUAL PENETRATING INJURY OF EYEBALL

Dr. J. Clyde Markel reported the case of A. H., colored, aged 51, liveryman, admitted to the hospital on August 8, 1922, giving a history of having been injured early the same morning while at work in a stable. His statement was that while throwing the harness on a horse, a strap swung around under the horse's neck and struck his left eye. Examination showed a ruptured globe, a badly lacerated, ragged wound of the cornea about 1 cm. long, running vertically through the inner limbus. A large portion of the lacerated iris prolapsed through the wound and the globe was partially collapsed.

Iris was excised and scleral suture inserted. Tetanus antitoxin was administered. A bad prognosis was given.

When seen early next morning, patient was found to have had a very bad night, with excruciating pain in the eye and head. Panophthalmitis had begun to develop, lids were swollen and edematous, conjunctiva very chemotic, rolling over the cornea sufficient to hide it. In the afternoon, he consented to enucleation, which was then done under general anesthesia.

On opening the globe, the structures were found greatly disorganized, the vitreous was filled with a large blood clot and some pus. In the center of the globe was found a large tough body, which proved to be a piece of leather 9x7x3 mm.

The history given by the patient when he was first seen, was doubted, for it seemed inconceivable that a blow with a strap in the manner described could produce such traumatism. The recovery of the leather proved that the injury had been produced in some other way. Inquiry elsewhere revealed the fact that patient had had some altercation with another employee and the supposition is that he was struck with the leather cracker of a teamster's whip with sufficient force to break the end off as it struck the eye. This version the victim emphatically denied and insisted that his original story was correct. He made an uneventful recovery and has an unusual amount of movement in his artificial eye.

In discussion, the consensus of opinion was that the patient's history was not plausible.

GUMMA OF EYELID

Dr. Edward B. Heckel exhibited an adult, male, colored, with a gumma at the junction of the middle and inner third of the left upper eyelid, who presented on September 13, 1922. Blood Wassermann was negative, which Dr. Heckel stated in his experience is not unusual in gummatous conditions. The lesion is now broken down and is responding to mercury, which is being administered in the form of 1/12 gr. doses of bichloride by mouth.

In discussion, Dr. Stieren stated that he has seen the primary lesion of syphilis on the lid, but never a gumma. He had a case of gumma of the lacrimal sac; it did not break down. Dr. Weisser saw a gumma of the eyelid 10 cm. in diameter, with punched-out margin and an indurated area around. It could not be seen unless the lid was everted.

George H. Shuman, M.D., *Secretary.*

STATE DEPARTMENT OF HEALTH, HARRISBURG, PA.

DIPHTHERIA TOXIN-ANTITOXIN MIXTURE; NEW FORMULA OF PARK

ROY G. MILLER

CHIEF, DIVISION OF SUPPLIES AND BIOLOGICAL PRODUCTS

Toxin-antitoxin mixture, as originally prepared at the Research Laboratories of the New York Department of Health, was prepared from diphtheria toxin of the strength of 3 L pluses to each dose. This toxin was properly neutralized with antitoxin.

This toxin-antitoxin mixture when administered to older children and adults, occasionally caused a reaction of undesirable severity. This reaction was largely a protein reaction caused by the toxin.

Dr. Park has recently found that diphtheria toxin, diluted with physiologically normal salt solution so that each cc. contains only 0.1 of an L plus dose when properly neutralized with antitoxin, produced an early immunity equal to that established by the former product, and caused no severe reaction, even in older children and adults.

The treatment is administered in three doses, at intervals of five to seven days, the injection being made subcutaneously, usually at the insertion of the deltoid muscle, avoiding veins.

The dose for children over six months and adults is one mil. (1 cc.) *Children under six months should be given only one-half the dose,* 0.5 mil. (0.5 cc.)

This treatment should not be administered as an immunizing agent following a contact exposure, because of the length of time necesary to produce immunity.

The laboratories furnishing biological products under contract to the Pennsylvania Department of Health are now preparing toxin-antitoxin mixture after Park's new formula. It has been accurately tested and determined by guinea pig inoculations and cultural examination to be sterile and suitable for administration.

This product does not appear on the state's free list of biological products, but will be furnished to hospitals, institutions and practicing physicians at state rates when ordered through the Harrisburg office, until such time as the Department of Health will be financially able to make a general free distribution.

INTRAVENOUS PACKAGE OF DIPHTHERIA ANTITOXIN

An essential element in the successful treatment of diphtheria is the early injection of large doses of antitoxin. Unfortunately, the therapeutic success of antitoxin is limited because many cases are not recognized and reported to physicians until too late.

In late stages of the disease, a 5,000-unit dose of antitoxin should be given intravenously when physicians are familiar with this route.

On January 1, 1923, the Pennsylvania Department of Health will place in the hands of the state distributors an intravenous package of diphtheria antitoxin for use of the physicians in delayed cases of diphtheria.

Two styles of packages will be assembled—one a syringe package and the other with a gravity injecting outfit.

The diphtheria antitoxin is especially prepared from antitoxin of high potency diluted with physiologically normal saline solution so that the total solid content is reduced to the proper percentage to facilitate rapid absorption.

Diphtheria antitoxin is absorbed much more rapidly when administered intravenously. Certain precautions, however, must be taken when this method of administration is followed.

Site of Injection: A prominent vein in the internal surface of the forearm in the region of the elbow, is usually selected as the point of injection. The vein should be distended by winding a bandage around the arm above the point of injection. The skin over the area of the injection should be cleansed with alcohol, and a small area over the selected point painted with tincture of iodine.

Administering the Antitoxin: The antitoxin in the syringe should be brought to body temperature by immersing the syringe in tepid water. The syringe should be shaken thoroughly and iodine or some other disinfectant applied to the rubber stopper. Remove the paper wrapping from the short end of the needle, leaving the long end of needle wrapped for protection and force the short end through the rubber stopper until the point of the needle clears the rubber, and no further. Insert piston rod and turn plunger to right before attempting to expel the contents from syringe. Then remove paper wrapping and wire from long end of needle, hold syringe in a perpendicular position to expel the air. When the needle is inserted into the vein, inject at the rate of 1 c.c. per half minute. When 1 c.c. is given, *stop,* without withdrawing the needle. Watch for any color change (cyanosis) in the patient. If none appears after a minute inject the rest of the dose very slowly—1 c.c. per half minute.

Precaution: As a precaution against anaphylactic shock it is advisable to administer five minutes before the antitoxin is given, five to ten minims of adrenalin intramuscularly, for children two to ten years, and older in proportion. If chill appears within ten to twenty minutes after antitoxin is administered, treatment should be the same as for shock: foot of bed elevated, head low, hot water bags to feet and legs, warm blankets and any cardiac stimulant.

Dosage: In ordinary cases of laryngeal diphtheria with no exudate in the throat, illness from twenty-four to forty-eight hours, the dose is 5,000 units. If severe and complicated, or of longer than forty-eight hours' duration, dose should be at least 10,000 units.

If results are not obtained after intravenous dose has been administered, the second dose twice the size of the intravenous dose should be given *intramuscularly.*

COMMUNICATIONS

AMERICAN MEDICAL ASSOCIATION EASTERN DISTRICT

OFFICIAL TOUR TO NATIONAL CONVENTION SAN FRANCISCO, CALIFORNIA

The American Medical Association Convention will be held at San Francisco, Cal., June 25-29, 1923. The subcommittee appointed by the secretaries of the Medical Societies of the Eastern States have arranged for the following twenty-five-day tour to San Francisco and return, stopping at interesting and important points. The details and arrangements of the trip will be assumed and handled by an experienced tourist representative who will accompany the party and take entire charge of the tour.

In order to be assured of special train privileges, it will be necessary to have one hundred and twenty-five or more persons subscribe to the tour.

The Committee extend to all who contemplate attending the convention a cordial invitation to join the tour, the details of which follow in proper sequence.

SCHEDULE

Friday, June 15th:

Lve. New York—New York Central R. R.—5:30 p. m.—E. S. T.
Arr. Albany—New York Central R. R.—8:55 p. m.
Dinner in New York Central dining car.
Lve. Boston—Boston & Albany R. R.—2:10 p. m.
Lve. Worcester—Boston & Albany R.R.—3:25 p. m.
Lve. Springfield—Boston & Albany R. R.—4:45 p. m.
Lve. Pittsfield—Boston & Albany R. R.—6:36 p. m.
Arr. Albany—Boston & Albany R. R.—7:55 p. m.
(Combine with New York City delegation.)
Lve. Albany—New York Central R. R.—9 p. m.
Lve. Utica—New York Central R. R.—11:08 p. m.

Saturday, June 16th:

Lve. Syracuse—New York Central R. R.—12:30 a. m.
Arr. Cleveland—New York Central R. R.—8:20 a. m.
Lve. Cleveland—New York Central R. R.—8:30 a. m.
Lve. Toledo—New York Central R. R.—10:15 a. m.—C. T.
Arr. Chicago—New York Central R. R.—4 p. m.

Breakfast and luncheon served in New York Central dining car. Transfer to hotel. Dinner provided. Transfer to A. T. & S. F. R. R. Terminal.

Lve. Chicago—A. T. & S. F. R. R.—8:10 p. m.

Sunday, June 17th:

Arr. Kansas City—A. T. & S. F. R. R.—8:55 a. m.

Breakfast served in A. T. & S. F. R. R. dining car. Two hour and twenty-five-minute stop. Automobiles sight-seeing tour of park and residential section included.

Lve. Kansas City—A. T. & S. F. R. R.—11:30 a. m.

Luncheon and dinner served in A. T. & S. F. R. R. dining car.

Monday, June 18th:

Arr. Denver—A. T. & S. F. R. R.—8 a. m.

Breakfast served in A. T. & S. F. R. R. dining car.

Denver.—Automobiles will be in waiting to convey the party via Ralston and Clear Creek Valleys to the summit of Lookout Mountain. Here a twenty-minute stop is made at the last resting place of the famous old scout, Buffalo Bill.

Lve. Denver—A. T. & S. F. R. R.—1 p. m.

Luncheon served in A. T. & S. F. R. R. dining car.

Arr. Colorado Springs—A. T. & S. F. R. R.—3:30 p. m.

Colorado Springs is one of the most popular tourist resorts in the United States. Automobiles will meet our party at station for ride through Crystal Park and Garden of the Gods, returning to train.

Lve. Colorado Springs—A. T. & S. F. R. R.—7 p. m.

Dinner served in A. T. & S. F. R. R. dining car.

Tuesday, June 19th:

Arr. Albuquerque—A. T. & S. F. R. R.—11 a. m.

Opportunity to visit Harvey Museum.

Lve. Albuquerque—A. T. & S. F. R. R.—1 p. m.

Breakfast, luncheon and dinner served in A. T. & S. F. dining car.

Wednesday, June 20th:

Arr. Grand Canyon—A. T. & S. F. R. R.—5 a. m.

The *Grand Canyon* of Arizona is one of the most stupendous spectacles in nature. Opportunity will be given to descend to the bed of the Colorado River or to ride in comfort around the rim of the Canyon.

Breakfast, luncheon and dinner will be served at the El Tovar Hotel.

Lve. Grand Canyon—A. T. & S. F. R. R.—8:30 p. m.

Thursday, June 21st:

Arr. San Bernardino— A. T. & S. F. R. R.—1:30 p. m.

Breakfast and luncheon served in A. T. & S. F. dining car.

San Bernardino.—Automobiles will convey the party via Redlands, Smiley Heights, Mount Rubidoux and Magnolia Avenue to the Mission Inn, Riverside, where dinner will be served. A special organ recital will be given. There will be ample time to enjoy the many attractions at this historic resort.

Lve. Riverside—A. T. & S. F. R. R.—8 p. m.

Arr. Los Angeles—A. T. & S. F. R. R.—9:45 p. m.

Passengers and hand baggage will be transferred to Hotel Rosslyn, where lodging will be provided (two persons to each room with bath).

Friday, June 22d:

As the many points of interest will attract the members of the party, meals while in Los Angeles have not been included.

Passengers and hand baggage transferred to Southern Pacific R. R. Terminal.

Lve. Los Angeles—Southern Pacific R. R.—8 p. m.

Saturday, June 23d:

Arr. Merced—Southern Pacific R. R.—7:50 a. m.

Breakfast in Southern Pacific dining car.

Lve. Merced—Yosemite Valley R. R.—8:05 a. m.

Arr. El Portal—Yosemite Valley R. R.—11:45 a. m.

Yosemite National Park, located in the heights of the Sierra Nevada Mountains in California, 4,000 to 9,000 feet above sea level and covering an area of 719,622 acres, embraces so much in nature that one feels that this realm of enchantment was created solely for the purpose to which it is to-day devoted—for the recreation and enjoyment of mankind.

SCHEDULE OF YOSEMITE TOUR

Lve. El Portal—Automobile—12:40 p. m.

Arr. Yosemite Lodge—4:45 p. m.

Automobile tour of upper and lower floors of the valley.

Luncheon, dinner and lodging provided at the Yosemite Lodge.

Sunday, June 24th:

Breakfast, Yosemite Lodge, 6:15 a. m.

Lve. Yosemite Lodge—Automobile—7 a. m.

Arr. Mariposa (Grove of Big Trees)—11 a. m.

Box luncheon at Big Trees Grove.

Lve. Big Trees—Automibile—12:05 p. m.

Arr. Glacier Point—Automobile—3:45 p. m.

Lve. Glacier Point—Automobile—4:45 p. m.

Arr. Yosemite Lodge—Automobile—7:30 p. m.

Dinner, Yosemite Lodge.

Lve. Yosemite Lodge—Automobile—8:45 p. m.

Arr. El Portal—Automobile—9:40 p. m.

Lve. El Portal—Yosemite Valley R. R.—10 p. m.

Monday, June 25th:

Arr. Merced—Yosemite Valley R. R.—2 a. m.

Lve. Merced—Southern Pacific R. R.—2:15 a. m.

Arr. San Francisco (Oakland Pier)—6:30 a. m.

Arr. San Francisco (Market Street)—7 a. m.

Passengers, hand baggage and trunks transferred to hotels.

(Hotel accommodations while in San Francisco not included.)

Monday, June 25th, to Friday, June 29th:

Attending *American Medical Association Convention, San Francisco.*

For those not actively engaged in the work of the convention, there is no city in the Great West where time can be spent more advantageously than in San Francisco. Beautiful Golden Gate Park, the Presidio, Mount Tamalpais and Berkeley, with the ever interesting Chinatown, are but a few of the many points of interest which may be visited.

Friday, June 29th:

Lv. San Francisco (Market St. Wharf)—Southern Pacific R. R.—10:20 p. m.

Saturday, June 30th:

En Route.

Breakfast, luncheon and dinner served in Southern Pacific dining car.

Sunday, July 1st:

Arr. Portland—Southern Pacific R.R.—7:20 a. m.

Breakfast served in Southern Pacific dining car.

Portland.—Nature has bestowed many of her rarest gifts upon the territory surrounding Portland. This combination of natural and artificial beauty is best exemplified in the Columbia River Highway Drive, which is included in the itinerary at this important stop-over point.

Luncheon and dinner served at Hotel Benson.

Lve. Portland—Union Pacific R. R.—11:30 p. m.

Monday, July 2d:

Arr. Seattle—Union Pacific R. R.—6:30 a. m.

Seattle.—A short stop will be made in this city. Automobiles will transfer party to the hotel Washington, where breakfast will be served. Short auto tour after breakfast, terminating at Canadian Pacific S. S. Wharf, where steamer will be boarded for daylight sail across Puget Sound.

Lve. Seattle—Canadian Pacific S. S. Lines—9 a. m.

Luncheon on steamer.

Arr. Victoria—Canadian Pacific S. S. Lines—1:15 p. m.

Victoria—the capital of British Columbia, is always of interest to the tourist. A short automobile trip is included in visit to this picturesque city.

Lve. Victoria—Canadian Pacific S. S. Lines—2:30 p. m.

Arr. Vancouver—Canadian Pacific S. S. Lines—7 p. m.

Transfer to Hotel Vancouver, where dinner will be served.

Evening in Vancouver. Cars will be parked; retire on train.

Tuesday, July 3d:

Lve. Vancouver—Canadian Pacific R. R.—3 a. m.

Breakfast, luncheon and dinner served in Canadian Pacific dining car.

With the snow-capped peaks of the Canadian Rockies always in view your daylight ride through the Fraser and Thompson River Canyons will prove of unusual interest.

Arr. Revelstoke—Canadian Pacific R. R.—7 p. m.

Wednesday, July 4th:

Lve. Revelstoke—Canadian Pacific R. R.—12:01 a. m.

Arr. Lake Louise—Canadian Pacific R. R.—9:30 a. m.

Breakfast served in C. P. R. R. dining car.

Passengers transferred to Lake Louise. Luncheon and dinner served at the Chateau Lake Louise.

Lake Louise—the pearl of the Canadian Rockies, is one of the "most perfect bits of scenery" in the world. A lake of the most exquisite coloring with sombre forests and cliffs that rise from its shores, the snow-crowned peaks that fill the background, glaciers centuries old, and the superb location of the wonderful Chateau will long linger in your memory.

Lve. Lake Louise—Canadian Pacific R. R.—9:25 p. m.

Arr. Banff—Canadian Pacific R. R.—10:30 p. m.

Cars parked; retire on train.

Thursday, July 5th:

Passengers transferred to Banff Hot Springs Hotel.

Banff—the gateway to the Canadian National Parks, is the last of the scenic attractions offered by this route of a "Million Wonders." The famous Hot Springs Hotel, where breakfast, luncheon and dinner will be served, is of unusual interest. The Cascade Mountains to the north—Mount Peeche to the south—with the famous Bowie River at their base, all combine to add color and variety to the wonderful setting of this world-renowned tourist resort.

Lve. Banff—Canadian Pacific R. R.—10:30 p. m.

Friday, July 6th:

En route through the fertile wheat-producing sections of Alberta and Saskatchewan.

Breakfast, luncheon and dinner served in Canadian Pacific dining cars.

Brief stops at Medicine Hat and Moose Jaw.

Saturday, July 7th:

Arr. Winnipeg—Canadian Pacific R. R.—8 a. m.

Breakfast served in Canadian Pacific dining car.

Winnipeg.—Automobile sight-seeing tour covering points of scenic interest which the "Frontier City" so amply provides, will be included.

Luncheon served at Royal Alexandria Hotel.

Lve. Winnipeg—Canadian Pacific R. R.—4:45 p. m.

Dinner served in Canadian Pacific dining car.

Sunday, July 8th:

Arr. St. Paul—Soo Line—8 a. m.

Breakfast served in Soo Line dining car.

St. Paul.—Automobile tour of the "Twin Cities" covering the many attractive points of commercial and scenic interest has been arranged.

Luncheon and dinner will be served at the St. Paul Hotel.

Lve. St. Paul—Chicago & Northwestern R. R.—8:15 p. m.

Monday, July 9th:

Arr. Chicago—Chicago & Northwestern R. R.—8 a. m.

Breakfast served in C. & N. W. dining car.

Train transferred to New York Central R. R. Terminal.

Lve. Chicago—New York Central R. R.—10:25 a. m.

Luncheon and dinner served in N. Y. C. dining car.

Tuesday, July 10th:

Arr. New York—Grand Central Terminal—9:22 a. m.

Breakfast served in N. Y. C. dining car.

COST OF TOUR

The following fares include transportation, Pullman accommodations, all meals enroute and features at stop-over points as indicated in itinerary:

One person in lower Pullman berth	$457.15
One person in upper Pullman berth	437.15
Two persons in compartment (each)	491.10
Two persons in drawing room (each)	516.15
Three persons in drawing room (each)	477.10

RESERVATIONS

All applicants desirous of joining the tour should communicate with Mr. J. S. McAndrew, Tour Manager, Lifsey Tours, Inc., Longacre Building, 1472 Broadway, New York, enclosing the sum of fifty ($50.00) dollars for each person, receipt for which will be given and amount applied to total cost of tour. The advance payment will be refunded if for valid reason applicant finds it necessary to abandon tour. Notice to this effect must be given on or before June 15th, when final payment is due.

MEMBERSHIP TICKETS

Membership tickets will be mailed to each member of the party. This ticket will show the assignment of space in sleeping cars and will entitle the bearer to all features included in itinerary.

BAGGAGE ARRANGEMENT

Each passenger will be allowed 150 pounds of baggage free. Special baggage car will be provided with baggage master in charge. Passengers may have access to their baggage at all points en route. Special baggage tags will be furnished each member of tour. Please write on tag, your name, home address, and hotel selected in San Francisco. Trunks, with tags attached, should be forwarded to New York Central Railroad Station, where station baggageman will see that the baggage is placed in the A. M. A. Special baggage car.

As a means of identification, hand baggage should also have a similar tag, securely attached, with name and home address plainly shown.

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1472 Broadway, New York, N. Y.

NEW REGULATIONS ON MARKETING OF MEDICAL WHISKY

Bottled-in-bond whisky will from now on gradually replace bulk whisky for medicinal use, under a decision recently issued by the Commissioner of Internal Revenue (see page 44 of this issue). This decision is the outcome of the resolution adopted by the House of Delegates in St. Louis, last May, recommending that provision be made for the marketing of whisky in bottled-in-bond containers, so that physicians who prescribe whisky may have some assurance that their patients will receive the genuine article. Throughout the conferences that have been carried on, the officers of the Association have met with cordial coöperation on the part of government officials. All agreed that, so far as it is necessary to use whisky for medicinal purposes, the supply should be of known purity. In the absence of any legal standard of purity, except that provided by the Bottled-in-Bond Act, it was generally conceded that any provision whereby bottled-in-bond whisky would be made available for medicinal uses to the patient in original sealed containers would go a long way toward solving the problem. One difficulty has been to find some way in which this could be done; that difficulty has been largely overcome in the decision just issued.—*Jour. A. M. A.*, Jan. 6, 1923.

CAMPAIGN FOR
DIPHTHERIA PREVENTION

Under the Auspices of

THE COMMITTEE ON PUBLIC RELATIONS

of the

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

In Pennsylvania, the diphtheria record, both in regard to its incidence and its case death rate, is not largely creditable to the profession. In some counties the case death rate is 24%. In other counties and localities it is down as low as 4%. This latter figure represents probably and for the present, its irreducible minimum.

Diphtheria can be prevented. It can be cured. But only by concerted action on the part of the medical profession.

The Medical Society of the State of Pennsylvania has taken upon itself the task—through its constituent bodies and its individual members—of making a creditable showing before the whole world. It is taking its first concerted and organized step in preventive medicine. No such step can possibly be effective without the medical profession. Given full coöperation of all its members and a proper knowledge of the subject, such a step is bound to produce results beyond the reach of any organized department of health.

In April, there will be a DIPHTHERIA WEEK, organized by the Committee on Public Relations of the Medical Society of the State of Pennsylvania, and conducted by the members of the profession, grouped or individually.

The campaign will be conducted in such wise that knowledge of the causes of incidence and mortality shall be carried to every citizen; the press, the church, the schools, local health and governmental authorities, civic and welfare organizations, business, and labor, will all be enrolled.

To each county medical society will be sent a formulation of the present knowledge of diphtheria and the complete means for its control. This is to be sent for discussion, suggestions and criticism; the agreement concerning the means of control to be published in THE PENNSYLVANIA MEDICAL JOURNAL.

The state heads of the various organizations will receive a communication asking for their coöperation in the form of communications addressed to subdivisions throughout the state. These subdivisions will then be approached by members of the medical profession organized in such working form that the entire membership may be reached. Sermons will be preached in the churches, lessons given in the Sunday schools and day schools, and business and labor organizations will be instructed by the medical profession. The press will lend its active support, both broadly through the state and locally. The citizen body will be enrolled in the campaign. The great power of organized medicine, as expressed through its individuals will be utilized to the full.

Every doctor in the state is asked: first, to inform himself fully of the modern methods of diphtheria control; second, to carry this knowledge to all the people.

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THE PENNSYLVANIA
MEDICAL JOURNAL

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FEBRUARY, 1923

EDITORIALS

THE PROPERTY OF THE STATE SOCIETY

For some years there have been many of the members of the Medical Society of the State of Pennsylvania who have visualized the need of a permanent location for the office of the State Journal and such other offices as may be appropriately placed in a central location. This need became more apparent after the State Society assumed control of THE PENNSYLVANIA MEDICAL JOURNAL.

This hope has finally materialized in the purchase of a property in Harrisburg by the Board of Trustees, which property is located at 230 State Street, a very short distance from Third Street, and in close proximity to the Capital. The location is ideal and the property as soon as it is prepared for occupancy will be used by the Executive Secretary and Editor of the JOURNAL, and the upper floors will be offered for rent.

We feel confident that as soon as the members of the State Society and its component organizations realize the benefits that will come to the organization by having a permanent office, we can forsee an increased interest in all the activities which surround an organization such as the Medical Society of the State of Pennsylvania.

CONSERVING THE HEALTH OF SCHOOL CHILDREN

Examination of school children under the supervision and direction of the State Department of Health is in its infancy and deserves all the support possible. There is no greater factor in conserving public health in general than keeping our growing school children under surveillance and guidance. The highest development of mind can best take place in any particular individual in a healthy body. In these days of intensive study and keen application in both the schoolroom and home we must be careful not to develop the mind at the expense of the body.

A strong mind and a weak body are almost as incompatible as the reverse. The ideal and higher development leads along the lines of comparatively equal physical and mental attainments. When considering this question we must not forget the future. We must not build for to-day but for both the physical and mental welfare of posterity.

How, then, can we improve the one and at the same time indirectly improve the other? If from an economic standpoint it is wise to maintain and improve the health of our children—surely no one would question this—then what is the reason that our cattle and hogs are more carefully guarded in the State of Pennsylvania than our children?

The answer probably is twofold: First, lack of intelligent coöperation by the public; second, lack of funds. No movement, however good, can attain its full value unless it has the endorsement and support of the public. How can this support be obtained? By a system of public health education. This education should consist of open meetings for the adult public, a series of graded talks to school children and the dissemination of instructive literature.

We must also show the public that the medical examinations are carefully made by competent men and that the recommendations made in the reports are trustworthy. These things cannot be done with the present funds available. It is to be hoped that the representatives of the public at Harrisburg will absorb sufficient public desire for improvement to provide for it along monetary lines. Surely there are thousands and thousands of dollars going into other less deserving channels; and surely no wiser nor better investment from an economic standpoint can be made than the giving of proper attention to the health of our children.

Three main divisions comprise this work: First, medical examination; second, graded physical exercise; third, public health instruction.

A few suggestions about medical examination are in order. Hasty, superficial, careless and irresponsible examination in the schoolroom or school building, with insufficient and limited equipment will, for obvious reasons, never prove adequate to court general public confidence in the reports rendered. In fact, confidence in this case would be misplaced and more harm than good would result both to the children and to the profession.

With the restricted funds available this work is seriously hampered and is not to be criticized. No physician can afford to give it the time and attention it deserves unless reasonably rewarded. The economic waste caused by the influence of delinquents hampered by physical defects, including the special senses, upon the mental standard of the entire school should not be underestimated. With our system of free public school instruction and with its universal compulsory attendance and grading by age, every attempt should be made to convert the liabilities into assets. If this is not done the mental standard and intellectual capacity of the entire country is certain to suffer.

Any criticism directed toward this problem, particularly that from the profession itself, should be constructive. Let us bend our efforts toward giving the coöperation of our representatives and the public for the improvement of a movement that has scarcely more than marked time in the last few years.

It would seem well to watch more advanced ideas along this work that at present are being concretely operated at Mansfield, Ohio, and at Gary, Indiana, especially that of Dr. Brown at Mansfield. No doubt much could be learned that would prove helpful in solving an important problem. N. S. W.

PNEUMONIA AND APPENDICITIS IN CHILDREN

This is the season for pneumonia in children and we should keep in mind the danger of mistaking it for appendicitis. According to reports, a good many cases of pneumonia in children are sent to hospitals for operation, with the diagnosis of appendicitis. In the early stage of pneumonia, before the physical signs are well defined, the operation for appendicitis has been done repeatedly, to the chagrin of the physician and surgeon upon discovering the patient to be suffering from pneumonia and not appendicitis. The surgeon, as well as the physician, has made this mistake; and at times it does seem to be exceedingly difficult to be certain of the diagnosis in the early stage of the disease and when the welfare of the patient demands an early diagnosis. In a hospital equipped with an x-ray apparatus, the physician may determine the existence of a pneumonic process before the physical signs are sufficiently developed. But there are extramural cases where a diagnosis must be made without the assistance of an x-ray apparatus, and such cases must be very carefully studied. It is not likely then that appendicitis will be mistaken for pneumonia.

Drs. F. Dennette Adams and Ben. J. Berger[1] report that out of a series of 145 cases of lobar pneumonia in children, 66 cases or 45.5 per cent. were sent to the hospital with the diagnosis of bronchopneumonia or lobar pneumonia, and that 25 cases or 17.6 per cent. were sent in with the diagnosis of appendicitis. They report that in some of the cases of pneumonia the abdominal symptoms were so marked that there was reluctance on the part of the surgeon to postpone operation. Favoring the diagnosis of pneumonia, they stress the importance of the existence of symptoms of coryza, or pharyngitis, or other low grade infection of the upper respiratory tract prior to the onset of the more acute symptoms of cough, with or without sputum, and pain in the chest with or without relation to respiration. If a relation between chest pain and respiration or cough can be established, this is an important differential point.

Only one patient out of 63 operated on for acute abdominal conditions showed cough and none gave a history of any other respiratory symptoms. A history of cough and chest pain is strong evidence in favor of pneumonia and against surgical conditions of the abdomen. The absence of cough and chest pain does not rule out pneumonia. The history of abdominal pain, vomiting and diarrhea is of no value in differentiating the two conditions. The pain in the pneumonia case, if present, is most severe and more distressing than the pain in uncomplicated appendicitis.

They emphasize what they call the "looks" of the patient. Children who have pneumonia always look extremely sick, while quite the opposite is true of the surgical patients, who, except in cases of peritonitis, and not in all of these, fail to give this impression.

In pneumonia the respirations are usually characteristic; short, rapid, shallow, and often accompanied with an expiratory grunt. The respiratory excursion may be limited on one side as compared with the other. The breathing is apt to be costal when the seat of trouble is below the diaphragm and abdominal when the reverse is true. In pneumonia, the face is usually flushed and the alae nasi are dilated. Herpes, if present, is strong evidence of pneumonia.

The child with appendicitis, as a rule lies quietly in bed if undisturbed, complains of nothing and shows signs of varying degrees of discomfort only when the abdomen is palpated. The respirations are quiet, seldom increased, and never appear to be associated with pain. In appendicitis, tenderness was always present, spasm less frequently.

The impression gained is that palpation reveals a different type of tenderness in the two conditions. In pneumonia it seems more severe, more superficial and is usually not well localized, but diffuse over a fairly large segment of the abdomen, although varying in degree over this area. The tenderness and pain are apt to be higher in the abdomen than in appendicitis. In pneumonia the part affected seems to be superficial rather than deep, and at times there seems to be a hyperesthesia. In appendicitis, if uncomplicated, the tenderness is slight unless deep palpation is made. In appendicitis, tenderness is more localized in a small area in the right lower quadrant. In abscess the tenderness is more acute; in peritonitis more diffuse, but often less marked than would be expected. What is true of pain is often true of spasm. There may be localized tenderness through the rectum, and if present, this is strong evidence in favor of appendicitis.

Frazer[2] calls attention to two signs, which he regards as of significance. The first he calls "opposite side palpation." On pressing the hand into the left side of the abdomen, if the origin of the pain is abdominal an accentuation is referred to the side of the infection, but if the pain is thoracic, no alteration in pain is produced. The second, which he calls the "collar test," is based on the development of the diaphragm. Irritation of this muscle is referred along the distribution of the fourth cervical nerve and an area of hyperesthesia can be marked out. This is absent in high appendicular affections, but is present in pleuropneumonic conditions. The leukocyte count is above 15,000 in more than 90 per cent. of pneumonia cases, but that high in only slightly over 8.5 per cent. of uncomplicated cases of appendicitis.

When we take into consideration the anatomical distribution of the lower six thoracic spinal nerves and keep in mind their connection with the corresponding sympathetic ganglia, we can understand how many of the symptoms may be produced which at times confuse the examiner and make it almost impossible to differentiate an early pneumonia from an appendicitis.

G. E. H.

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1. F. Dennette Adams and Ben. J. Berger: Differential Diagnosis of Lobar Pneumonia and Appendicitis in Children. Jour. A. M. A., Vol. 79, No. 22, November 25th, 1922.
2. Fraser, John: Abdominal Emergencies of Childhood. Brit. M. J., 1: 173, February 4th, 1922.

DOCTOR, HAVE A VOICE IN FIXING YOUR OWN FEES

The present agitation in the daily press over the affairs of the Workmen's Compensation Fund, reminds us that from the viewpoint of the Pennsylvania doctors, the Workmen's Compensation Laws are in need of revision. It is a well known fact that when this legislation was in preparation most of the doctors were caught napping. *Once was enough.*

Every physician in Pennsylvania should acquaint himself with the Workmen's Compensation Act of 1915, as amended in 1919, and see that he has a voice in the formation of laws which have for their purpose the fixing of his fees for services rendered. Each and every one of you has at Harrisburg an official representative from your own district, with whom you may confer on any proposed change in the Compensation laws.

That dissatisfaction with the present law exists is evident from the following resolutions which were adopted at a meeting of the Board of Trustees of the Hospital Association of Pennsylvania, held Tuesday, November 21, 1922:

"*Resolved,* That the Hospital Association of Pennsylvania, through its Board of Trustees, expresses its regret that the Workmen's Compensation Laws of the State of Pennsylvania do not provide adequately and specifically for the compensation of doctors and hospitals having the care and treatment of compensation cases."

"*Resolved,* That the Hospital Association of Pennsylvania, through its Board of Trustees will gladly join any proper movement having in view the amendment of the Compensation Laws of the State of Pennsylvania in a manner which will insure justice to employer, employee, doctor and hospital alike."

G. H. C.

TO THE WIVES AND DAUGHTERS OF OUR MEMBERS

Among the many responsibilities that you have acquired with the suffrage is that of making yourselves familiar with the great problems of public health. I do not mean, of course, that you should devote your lives to these problems, but that you should acquire a knowledge of them adequate to make you an intelligent voter and an intelligent promoter of all public or club meetings where questions of hygiene or sanitation are to be discussed. The medical profession differentiates itself from all other vocations in that its major aim is the public welfare, without any consideration of social standing, religious affiliations, or financial or political gains.

The slogan of the medical profession is "Prevention." Prevention means protection, protection of the masses, rich and poor, illiterate and educated, against disease and against physical and mental inefficiency which comes from faulty feeding, housing and ways of living; protection also of the ignorant and guileless against the charlatan and the paranoiac, the most despicable of imposters, who make their living by legally robbing their fellow men and often condemning their victims to an early death by robbing them of the time when a cure might have been possible.

Preventive medicine demands intelligent coöperation from the people and intelligent legislation. Therefore, the foundation of preventive medicine must rest upon education—education of the masses, education of the legislators and education of the judiciary in all matters pertaining to public health, and the support of the educated legislator or would-be legislator at the polls by every qualified voter.

The judiciary and often the legislators are chosen from the lawyers. Never miss an opportunity to put a lawyer right on any question affecting public health or medical legislation. Lawyers are usually good psychologists but often know nothing about sociology. This general education in all these matters is imperative. An intelligent, consistent and persistent effort in this manner will in the end save more lives and insure more happiness than any possible use of drugs can ever do.

The good which the wives and daughters of medical men of Pennsylvania and Delaware can accomplish by their earnest coöperation is incalculable.

Furthermore and right in line with this plea, I wish to urge you to subscribe to and to read the new lay journal of the American Medical Association—"Hygeia." It will be found to be interesting, instructive and profitable to all those who are concerned about health and efficiency for themselves, their families and their communities. The doctor's family should be his best recommendation and a model to the community.

L. L.

SPECIALISTS

The tendency of all the organizations on special lines, such as the American College of Physicians, American College of Surgeons, the American College of Ophthalmology and similar societies, is to require that candidates for membership shall have been in general practice for at least five years. This is as it should be.

The young student or tyro-interne sometimes gets a disproportionate sense of values and thinks that he has been ordained of God to follow some special lines because of the enthusiasm of a chief, accidental connection with some surgical cases or envy of some physicians who are financially successful in their practice.

We have known of some graduates who have been advised by their loving friends to adopt certain specialties because of the popular success of certain individuals. These friends forget that each physician must inject his own personality into his active life, and that because Dr. A., who might be very attractive in personality but poorly equipped professionally yet gains a large clientele, is successful, it does not follow that Dr. B., who may be better prepared professionally but lacking in the requirements that make for popularity or who is not a so-called good mixer, will reap financial prosperity.

The human nature side of the practice of medicine is but very poorly developed in the recent graduate in medicine. In former years a very valuable and essential requirement was that a medical student should have studied under a preceptor, who in his friendly manner could instruct the prospective student in the handling of the patient as an individual. During the past decade the medical college and interneship periods have been largely under the direction of teachers who are, as a rule, not in very close contact with the public as individuals. Their narrow viewpoint is to regard the patient as an interesting case of a certain disease; and the personal relation between student or interne and patient seldom results in the doctor getting close enough to his patient to have him unburden his heart, as always happened with the old fashioned, honest and humanized practitioner. The medical profession lost much of the finer side of the art of medicine when machine-made instruction was made the standard of so-called educational efficiency.

A. C. M.

PRACTITIONERS FOR THE FUTURE

WHY DAD DON'T WANT ME TO BE A DOCTOR

"Yes, Dad says he'd rather I took up some other vocation in life than medicine. You know my father is a doctor, and a darn good one, too! So you see, I've always thought I'd like to follow in his footsteps and practice medicine. Dad and I've always been great chums as I grew up, but now that I've finished high school he says he wants me to think about something else than medicine. He says he thinks the practice of medicine's one of the hardest professions there is, and he wouldn't study it again knowing what he does about it now. He says the specialist is all right and has it much easier than the general practitioner, but everybody can't be specialists. Night calls, bad roads, bad weather, long drives and poor pay, he says, make life a burden. Then, too, so many people—even when you give them the best possible service—don't appreciate what you do for them. So, I guess I'll take Dad's advice and study for one of the engineering degrees—don't know which just yet. Then when I get through I won't have to wait so long before I can make a living, as I would in medical practice; I'll be able to begin work before I'm grey-headed. It takes too long to get through medical college, these days."

Does this not have a familiar sound to many medical men, especially those who have sons and have had to meet the problem of what occupation they should follow?

There is, however, a more serious side to this problem that appears to many who are now in the practice of medicine. It is true that there are far more applicants for entrance into the medical colleges of this country than can be received by these colleges. It is also true that the great majority of applicants comply with whatever preliminary and premedical requirements are prescribed for entrance into the colleges. The trouble lies in the fact that the higher the requirements and the greater the length of time consumed in graduating from medical college and in completing the hospital year before a license is received, the greater the tendency for these graduates to locate in large centers of population. This condition is prevalent to-day and the tendency is increasing as the years pass. The smaller towns and rural localities are beginning to realize a lack of proper medical service.

The type of student body to-day is not the same type that was found on the benches a decade or so ago. There are fewer farmers' sons, fewer sons and daughters of those who reside in rural communities. The reason for this is the high cost of a medical education and the length of time required to complete the medical course necessary for a license to practice. The only other consideration in the way of business competition, if it might be so called, is the entrance of the cult practitioner whose preparation requires only a small outlay of time and expense.

Those who are largely responsible for doctors' sons avoiding the study of medicine are the doctors themselves. Are we, therefore, going on in this way until the history and traditions of medicine are lost sight of and commercial medicine only will be in existence? Many of us of the older school will regret the day when this comes to pass. We would not be alarmists, but do want to point out this growing tendency, which it is hoped may be corrected by those in authority before it is too late.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

THE PROGRESS OF WOMEN IN MEDICINE, FROM A BUSINESS VIEWPOINT

From a strictly financial point of view there is some question as to just how much progress women in medicine have made during the last generation or two. An address given in the year 1881 by Rachel L. Bodley, A.M., M.D., once Dean of the Women's Medical College, presents an elaborate report on inquiries made as to the success that the alumnæ had attained during the thirty years previous. Dr. Bodley's fifth question relates to the monetary value of the medical practice per year, and is answered by seventy-six women. All had made a living and more, while many had achieved handsome incomes, as shown by the following statistics:

24 made as much as $1,000 and less than $2,000
20 made as much as $2,000 and less than $3,000
10 made as much as $3,000 and less than $4,000
5 made as much as $4,000 and less than $5,000
3 made as much as $5,000 and less than $15,000
4 report sums varying from $15,000 to $20,000 per year.
10 report less than $1,000 per year.

The average income is found to be $2,907.30 for each of the 76. The four who report the exceptionally large sums are established practitioners and have reported the amount each year for several years.

These figures may probably be relied upon by the social statistician as a fair estimate of the income of women physicians, since many who contributed were careful to state that they gave only actual receipts as indicated by bank book or ledger, and several declined to attempt a reply, stating as the reason that they were too busy to make an accurate estimate and were unwilling to hazard a guess. Several who made no estimate, replied that they were able to support comfortably families varying in size (frequently stating the number in family—father, mother and brother; mother and sisters; several nephews and nieces, etc.). Three reported having accumulated sums sufficient to permit them to retire from active service.

Upon inquiry, I believe that the incomes of the present generation of medical women compare favorably with the above statistics and probably exceed them to some extent.

One of my professors, who is a very brilliant and dear old gentleman, made this statement in a letter to me: "I have heard many objections to women in medicine, but I never heard even the most rabid opponent say that they could not make a living." He further stated that "Women in medicine have attained *professional* success. Business success is no criterion of character. Quacks make a great deal of money." I do find, from experience and observation, that medicine offers much to any woman who wishes to study it.

In our own great country, we find that there were women physicians as early as 1636, when Anne Hutcheson came to Boston to practice her profession. She is spoken of as a person "very helpful in the time of childbirth and other occasions of bodily infirmities, well furnished with means for these purposes." In the middle of the nineteenth century the first American woman physician was graduated in America.

There were many barriers and prejudices to overcome in this once new field for women, as there have always been in any new field. Now, most universities have opened their doors to women medical students. Postgraduate schools and clinics are all open to women, so far as I know. Women are admitted to membership in all medical societies. Many hospitals admit women as internes or resident physicians, many institutions having women at their heads. Many manufacturing plants and department stores have women physicians to care for their women employees, and women in medicine have a place in laboratories and research work. In fact, women are now given equal privileges with their brothers in medicine in every way.

It costs several thousand dollars to prepare for the practice of medicine; yet I know of scarcely any other profession in which a capable woman is able to earn as much money and find as much happiness, to say nothing of the good that can be accomplished, as in the medical profession. A successful woman physician finds her life's work satisfying. She is not contemplating a change of occupation, constantly unsettled deciding as to whether she shall turn to this or to that.

There is nothing in the study or practice of medicine to detract from the fine qualities or charms of a woman. Any woman who possesses these attributes when entering upon the study of medicine will finish her course in full possession of them; and any woman who is truly womanly and on the level in her professional dealing will find a welcome in medicine regardless of sex. I have met a great many of the leading men in the profession of our great state and many of high professional standing in other states, and they are truly gentlemen. In medicine as in anything else courtesy begets courtesy.

It has also been shown by the statistician quoted above that the influence of the study and practice of medicine has in no way interfered with a woman's holiest relations, those of wife and mother.

There is a distinct place for women in medicine, especially in the treatment of the ailments of their own sex, and no one will dispute the fact that they have done good honest work. To those women who are religiously inclined and desire to become missionaries, a medical education is invaluable—especially in the work in a foreign country. Women physicians have done excellent work in the missionary field.

Having graduated in medicine twelve and a half years ago, I should advise any womanly woman who desires to study medicine to do so, and I am sure that she will in no way be disappointed. Edith MacBride, M.D.

203 Dollar Title and Trust Bldg.,
Sharon, Pa.

MILK AND INFANT MORTALITY

Fifty years ago the mortality in New York City of infants who were fed on bottled milk was 100 per cent. Now, thanks to pasteurized and certified milk, all other things equal, no child need die because of impure milk. As an economic question, considered in the value of lives to the community, this saving would constitute ample recompense for the large sums of money that have been expended on behalf of the little ones. A. C. M.

Dr. O. Pine queries: May not surgeons be divided into two classes, to wit: those who are fine operators and those who are fine collectors of cutlery?

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

PUBLIC RELATIONS

Proper relations between a county medical society and the people of the county are exemplified by the energy with which twenty-five members of the Cambria County Medical Society have contributed their time and service in a great campaign for diphtheria prevention. In nineteen towns of the county (exclusive of the city of Johnstown) these physicians have coöperated systematically with the Health Department in educating parents and school authorities to the advantages of the Toxin-Antitoxin, and in the actual immunization against diphtheria of about seventeen thousand children.

In Allegheny county the medical society is serving the public through its Sanitation Committee, which has placed at the command of the various civic and church clubs a list of eighteen lectures by members of the society on sickness-prevention topics. Facilities for broadcasting same by radio have been accepted subsequent to an invitation from the Westinghouse Electric and Manufacturing Company. This Society also, on February first, under the auspices of the Academy of Science and Art of Pittsburgh, provided for a lecture, open to the public, by Ernest Harold Baynes, on the subject of "The Truth about Vivisection."

The personnel of the Public Relations Committee of the Medical Society of the State of Pennsylvania is published in this issue of the JOURNAL. This committee, immediately after its appointment by President Litchfield, met in Harrisburg and organized by electing Dr. Edward Martin Chairman, and Dr. Frederick L. Van Sickle Secretary. Following this leadership in campaigns of public education in matters of public health and hygiene, this most important committee will create close coöperation between county medical societies and the public, and with welfare organizations.

POSTGRADUATE PROGRESS

Under date of January 15, 1923, Dean Meeker of the Graduate School of Medicine of the University of Pennsylvania, furnishes the following encouraging comments on the progress of the University extension plan:

"The project of coöperation between the Medical Society of the State of Pennsylvania and the Graduate School of Medicine of the University of Pennsylvania looking toward a beginning of extension postgraduate medical courses in the state during the winter of 1922-1923 is bearing good fruit.

"The plan is at this date in full operation in Philadelphia and Scranton; and negotiations are under way for groups to be formed in Pottsville, Sayre, Easton-Bethlehem, West Chester and York. It is unlikely that more can be accomplished during the present winter."

"The task of establishing the whole plan on a state-wide basis is a huge one, and will necessarily require about three years for its accomplishment. Applications made to the Dean of the Graduate School of Medicine will be handled as rapidly as possible in the order received.

"It is hoped that a plan may be arranged for Pittsburgh next winter by coöperation with the University of Pittsburgh and Pittsburgh hospitals.

"The plan for Scranton is, broadly speaking, the model for the other centers. Fifty physicians in the Scranton district form the group for that center. Weekly meetings began November 20, 1922, and will continue until the first series of twenty-five meetings upon various phases of internal medicine have been completed. The studies are conducted upon the clinical conference basis. The greatest enthusiasm is being displayed, and the experience being gained will be invaluable in directing the plans for other centers.

"The practical operation of the plan is yet too new to justify any sweeping conclusions, but results to date are most encouraging and indicate that adequate support by the profession, and by the state will insure the final success of a movement which will be of notable value to the whole citizenry."

SAN FRANCISCO, 1923

Elsewhere in this issue of the JOURNAL you will find full details of an attractive official tour to the next convention of the American Medical Association, which has been arranged by a subcommittee composed of the secretaries of the medical societies of the eastern states. This is a splendid opportunity for a congenial party to enjoy a most comprehensive visit to the western section of our country, and should assure not only a full attendance of the delegates chosen to represent our Society at the American Medical Association convention in 1923, but also of many members who appreciate relief from the petty annoyances of arranging for hotel, automobile and baggage accommodations.

HOT SPARKS!

Montgomery County Medical Society, with 159 members, has, on January 12th, paid the 1923 annual assessment of the State Society for 103 members.

Lycoming County Medical Society, with 107 members, maintained an average attendance of 55 at its stated meetings during 1922.

On January 18, 1923, this office had received the annual assessment of 1,057 members; on the same day, 1922, of 649 members; 1921, of 892 members; 1920, of 774 members.

Dr. Luther B. Kline, for fourteen years Secretary of the Columbia County Medical Society, declined reëlection for the current year. In 1909, Dr. Kline instituted the publication of "The Roster," and his society at its December, 1922, meeting heaped honors upon his worthy head. Dr. Kline, during his tenure of office, was faithful to every detail of the duty of the component society secretary to the State Society.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to January 20th:

Allegheny: *New Members*—Frederick Amshell, 1727 Murray Ave.; Harvey Bartle, 1155 Liberty Ave.; John D. Criss, 626 Warrington Ave.; John H. Curran, 1540 Beechview Ave.; Lewis E. Davis, 611 May Bldg.; Robert S. Hensell, 1435 Potomac Ave.; Ernest W. Logan, 2006 Beaver Ave., N. S.; Anthony S. Mallek, 2625 Penn Ave.; Harvey B. Powers, 1436 Fifth Ave.; Tucker L. Randolph, Twenty-Seventh and Carson Sts.; John L. Robertson, 1450 Columbus Ave., N. S.; Dennis E. Szabo, Tuberculosis Hospital, Bedford Ave.; Ruth P. Walker, 343 S. Rebecca St.; Carl C. Yount, Jenkins Arcade; John K. Musgrave, 1840 Wynhurst Ave.; James A. Rodgers, 1017 Highland Bldg.; George J. Busman, 637 Union Arcade; William R. Cooper, 5408 Penn Ave.; Morton McCahill, 5204 Second Ave.; Clayton C. Perry, 820 Highland Bldg.; Francis P. Tarnapowicz, 3433 Butler St., Pittsburgh; William H. Flickinger, 607 Braddock Ave., Braddock; Francis Ford, 30 Gaskill St., Jeanette; Hubert J. Goodrich, 911 Island Ave.; John H. Humes, 717 Chartiers Ave.; Joseph A. Lafferty, 604 Chartiers Ave., McKees Rocks; Ernest G. Kuhlman, Bridgeville; Robert Patterson, 539 Larimer Ave., Turtle Creek; John G. Wurtz, 55 Overbrook Ave.; Eleanor H. Balph, 1015 Center Ave., Wilkinsburg; George A. Speer, 351 Butler St., Etna; Charles C. Dickey, Russelton; Walter R. Foster, Crafton. *Resignation*—Robert T. Miller, Baltimore, Md. *Death*—Orson T. Staufft (West. Res. Univ., '83), of Pittsburgh, Dec. 23, aged 64.

Armstrong: *New Member*—Jessie W. Campbell, Elderton.

Beaver: *New Member*—Henry L. Gozdicki, Ambridge.

Berks: *New Member*—Paul M. Vogt, 1058 N. Eleventh St., Reading. *Reinstated Member*—Charles Roland, 6387 Drexel Road, Overbrook, Philadelphia. *Removal*—Harry A. Britton, from Reading to 109 Orchard Place, Ithaca, N. Y.

Bucks: *New Member*—Thomas J. Clemens, Southampton. *Death*—Franklin Watson (Hahnemann Med. Coll., '97), of Willow Grove, Dec. 25, aged 61.

Butler: *New Member*—Joseph J. Schultis, 127 So. Main St., Butler. *Reinstated Member*—Raymond A. Thompson, 110 So. Main St., Butler.

Cambria: *New Member*—William B. Templin, 88 Osborn St., Johnstown. *Reinstated Member*—George W. Krumbine, Ashville. *Removal*—Francis M. Schilling, from Johnstown to Philadelphia. *Transfers*—Samuel P. Boyer, 175 Fairfield Ave., Johnstown (formerly of Finleyville), from Washington County Society; James J. Monahan, Shenandoah, to Schuylkill County Society.

Chester: *Reinstated Member*—I. Pemberton Hollingsworth, Chester County Hospital, West Chester. *Transfer*—J. Huston Johnson, Waterman (Ind. Co.), formerly of Glen Moore, to Indiana County Society.

Clearfield: *New Member*—George D. Fussell, 309 W. Market St., Clearfield.

Clinton: *New Member*—George Tibbins, Beech Creek.

Crawford: *New Members*—C. Melvin Sonne, Titusville; J. Wallace Hazen, Meadville; Clyde F. Smith, Box 206, Conneaut Lake. *Transfer*—David C. Mock, Redlands, Calif., to California Society.

Dauphin: *New Members*—Matthew H. Sherman Harrisburg Hospital; George A. Zimmerman, 213 N. Second St.; Wilbur P. Rickert, 110 Market St., Harrisburg.

Delaware: *New Member*—Ferdinand W. Wyemetz, 805 Barclay St., Chester. *Resignation*—Frank E. Johnston, Moores.

Erie: *Removal*—William W. Richardson, from Erie to Mercer (Mercer Co.). *Death*—Homer E. Griswold (Cleveland-Pulte Med. Coll., '03), of Erie, Dec. 14, aged 43.

Fayette: *Removal*—Martin J. Larkin, from Brier Hill to 2104 E. Chelten Ave., Gtn., Philadelphia.

Lawrence: *Deaths*—Samuel R. W. McCune (Jeff. Med. Coll., '06), of New Castle, Dec. 9, aged 46; Harry W. McKee (Jeff. Med. Coll., '87, of New Castle, Jan. 13, aged 61.

Luzerne: *Reinstated Members*—Morgan E. Griffith, 17 W. Ross St.; Anthony J. Caffrey, 311 So. Washington St., Wilkes-Barre. *Removal*—Robert N. Clark, from Wilkes-Barre to 80 N. Dorrance St., Kingston. *Transfer*—William L. Grala, Hazleton, from Philadelphia County Society.

McKean: *Death*—Louis D. Joseph (Jeff. Med. Coll., '04), of Bradford, recently, aged 44.

Mercer: *New Member*—Howard G. Lafferty, 303 Dollar Title & Trust Bldg., Sharon. *Transfer*—W. W. Richardson, Mercer, from Erie County Society.

Northampton: *Reinstated Member*—Arno R. Zack, Bethlehem.

Philadelphia: *New Members*—Otto W. Aichele, 2832 N. Sixth St.; Robert A. Bradley, 937 N. Sixty-Fifth St.; Lee M. Bryan, 4200 Chestnut St.; Louis H. Clerf, The Clinton, Tenth and Clinton Sts.; Patricia H. Drant, 2026 Locust St.; Frederick H. Ehmann, 5039 Market St.; Francis H. Eaton, 633 N. Fortieth St.; J. Howard Frick, 1815 Fairmount Ave.; Albert S. Hyman, Mt. Sinai Hospital, 1429 S. Fifth St.; Robert Miller, 336 So. Second St.; Abram H. Persky, 1930 N.

Thirty-Second St.; John G. Sabel, 5245 Baltimore Ave.; Robert A. Schless, Sixteenth and Walnut Sts.; Henry A. Stone, 703 N. Fifth St.; Adolph A. Walking, 2808 Girard Ave., Philadelphia. *Reinstated Members*—William E. Donnelly, 616 N. Fifty-Third St.; John L. Donahue, 216 E. Price St., Gtn.; Harry E. Ungerleider, 2107 Fairmount Ave., Philadelphia. *Deaths*—Eugene A. Moore (Jeff. Med. Coll., '08), of Philadelphia, Nov. 27, aged 39; George G. Ross Univ. of Penna., '91), of Philadelphia, Dec. 27, aged 57; William H. Morrison (Univ. of Penna., '80), of Philadelphia, Dec. 31, aged 67.

Perry: *Transfer*—Arthur D. Van Dyke, Williamsport, to Lycoming County Society.

Somerset: *Removal*—A. L. Keim, from Stoyestown to Jerome; Albert M. Uphouse, from Somerset to Stoyestown. *New Member*—Charles C. Barchfeld, Somerset.

Washington: *New Member*—William S. Stewart, Finleyville.

Westmoreland: *New Members*—Arthur D. Barnhart, Youngwood; Joseph E. Sunder, Delmont. *Transfer*—Isaac J. Israel, Renton, to Allegheny County Society; Ray M. Alexander, Bolivar, to Cambria County Society.

York: *Removal*—William H. Gittens, from York to 1346 Walnut St., McKeesport (Allegheny Co.).

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since December 15th. Figures in first column indicate county society numbers; second column, State Society numbers:

For 1922					
Dec.	19	Northampton	139	7316	$5.00
	21	Philadelphia	2018–2020	7317–7319	15.00
	30	Butler	51	7320	5.00
Jan.	2	Cambria	131	7321	5.00
	5	Luzerne	232–233	7322–7323	10.00
	11	Berks	141	7324	5.00
For 1923					
Dec.	16	Elk	1–7	84–90	35.00
		Columbia	4–14	91–101	55.00
		Delaware	1–11	102–112	55.00
	19	Somerset	2–6	113–117	25.00
		Montour	3–8	118–123	30.00
		Beaver	2–11	124–133	50.00
		Erie	4–5	134–135	10.00
		Bucks	1–20	136–155	100.00
	20	Venango	3	156	5.00
	21	Somerset	7–8	157–158	10.00
		Philadelphia	1–11	159–169	55.00
	22	Delaware	12	170	5.00
	26	Somerset	9–10	171–172	10.00
		Montgomery	16–35	173–192	100.00
		Delaware	13–14	193–194	10.00
		Lehigh	3–6	195–198	20.00
	27	Montour	9	199	5.00
	28	Elk	8–9	200–201	10.00
		Montgomery	36–48	202–214	65.00
	29	Somerset	11–12	215–216	10.00
	30	Montour	10–12	217–219	15.00
		Butler	1–6	220–225	30.00
		Montgomery	49–65	226–242	85.00
Jan.	2	Cambria	4	243	5.00
		Juniata	1–3	244–246	15.00
		Delaware	15–18	247–250	20.00
		Erie	6–7	251–252	10.00
		Crawford	1–5	253–257	25.00
	4	Westmoreland	1–2	258–259	10.00
		Mercer	1	260	5.00
		Delaware	19–20	261–262	10.00
		Northumberland	3–9	263–269	35.00
		Juniata	4–5	270–271	10.00
		Allegheny	1–153	272–424	765.00
	5	Erie	8–22	425–439	75.00
		Somerset	13–15	440–442	15.00
		Luzerne	1	443	5.00
		Delaware	21	444	5.00
	6	Mercer	2–6	445–449	25.00
		Montgomery	66–85	450–469	100.00
	8	Mercer	7	470	5.00
		Delaware	22–23	471–472	10.00
		Crawford	6–17	473–484	60.00
	9	Clinton	1–4	485–488	20.00
		Delaware	24–25	489–490	10.00
	10	Mercer	8–9	491–492	10.00
	11	Mercer	10–14	493–497	25.00
		Mifflin	8–12	498–502	25.00
		Delaware	26–33	503–510	40.00
		Blair	1–15	511–525	75.00
		Union	1–7	526–532	35.00
		Berks	1–59	533–591	295.00
	12	Butler	7–14	592–599	40.00
		Mifflin	13	600	5.00
		Adams	1–16	601–616	80.00
		Lycoming	19–36	617–634	90.00
		Somerset	16–18	635–637	15.00
		Delaware	34	638	5.00
		Clearfield	1–21	639–659	105.00
		Delaware	35–36	660–661	10.00
		Bucks	21–40	662–681	100.00
		Mercer	15–31	682–698	85.00
		Cumberland	1–16	699–714	80.00
		Allegheny	154–281	715–842	640.00
		Dauphin	1–37	843–879	185.00
		Armstrong	2–26	880–904	125.00
		Lycoming	37–62	905–930	130.00
		Montgomery	86–103	931–948	90.00
		Mercer	32	949	5.00
		Delaware	37–38	950–951	10.00
		Columbia	15–21	952–958	35.00
	16	Montour	13–14	959–960	10.00
		Delaware	39	961	5.00
	18	Union	8–9	962–963	10.00
		Delaware	40	964	5.00
		Cambria	1–3, 5–43	965–1006	210.00
		Dauphin	38–42	1007–1011	25.00
		Delaware	41–42	1012–1013	10.00
		Mifflin	14	1014	5.00
		Venango	4–10	1015–1021	35.00
		Chester	1–34	1022–1055	170.00
		Delaware	43–44	1056–1057	10.00
	19	Wayne	1–9	1058–1066	45.00
		Wyoming	1–12	1067–1078	60.00
		Union	10	1079	5.00
	20	Venango	12–14	1080–1082	15.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
212 N. Third St., Harrisburg

LEGISLATION

WATCH THIS DEPARTMENT

It is our purpose to present to the readers of The Pennsylvania Medical Journal in this department each month during the Session of the Legislature, a résumé of the bills which have been introduced up to the time the Journal goes to press. It is now something over a month since the Legislature was convened and the time has been consumed largely in preparing for the work of the Session. In looking over the bills that have been introduced we find that there are two in which the profession will be largely interested.

The first is an Act to exempt from vaccination children whose parents have conscientious scruples against vaccination. This bill, were it to become a law, would be the opening wedge to allow anyone to appear before the proper authorities and declare that they had conscientious scruples against vaccination, which would prevent their children from being vaccinated, thereby leaving them unprotected against smallpox. This is another effort to evade the compulsory vaccination law of the Department of Health and should be vigorously opposed by every member of the profession. This bill was introduced by Representative Henry I. Lauver, from Mifflin, Juniata County.

The second bill of interest to the profession was introduced by Hon. James A. Dunn, of Philadelphia, and is known as the Chiropractic Bill. At this writing copies of the bill have not appeared, and we are unable to discuss it thoroughly; but from information which we have gathered, this bill is very sweeping in its provisions, granting extensive privileges to the chiropractor. It will be our purpose to circulate the full copy of this bill among the county societies as soon as possible, so that they may be familiar with its provisions, and will, therefore, be able to direct the Medical Legislative Conference as well as be directed by it in regard to the attitude the profession shall take toward this bill.

Another bill, introduced by the Honorable Mr. Jones, provides for the protection of the public against fraud and deception in the manufacture and sale of adulterated ice cream and its products. This, in a large degree, is a matter for the consideration of the Department of Health, and yet it is a matter with which the profession should be conversant.

A second adulterated food bill was introduced by the Honorable Mr. Culbertson, which relates to the sale, or exposing for sale, or having in possession with intent to sell, adulterated, misbranded or deleterious foods, and prescribing certain duties of the dairy and food commission in reference thereto. This again is a matter for the Department of Health, but is in line with our previous comment.

We are pleased to note that Hon. Joseph G. Steedle, of Allegheny County, is the chairman of the Committee on Public Health and Sanitation of the House, and that the Hon. Frank A. Smith, of Dauphin County, is the chairman of the Committee on Public Health and Sanitation of the Senate. These representatives of the people in the interests of public health bore the brunt of the 1921 session of the Legislature in health matters and were particularly friendly to the interests of the medical profession. We feel sure that they will use every honorable means to see that legislation during the coming months will be just and fair to all parties concerned.

It is the purpose of the Medical Legislative Conference to keep the members of the profession notified, in so far as possible, as to measures that will appear from time to time in the House and Senate, as well as the date of hearings upon bills of importance.

We trust that the officers and members of the component county medical societies will recall the effort made during the past year by the Conference and not fail to respond to every request for coöperation during the next few months.

PROPAGANDA FOR REFORM

Neisser-San-Kahn Not Accepted for N. N. R.—This product is marketed by the York Laboratories, York, Pa., as "a new genito-urinary product" with the claim that, "in Neisser-San-Kahn the genito-urinary surgeon has at his command a new salt of marked value in urethral infections." The product is said to be a definite chemical body, zinc borosalicylate, and to have the composition indicated by the chemical formula $(C_{14}H_{10}BO_7)\ 2Z$. Neisser-San-Kahn is claimed to be "especially adapted for treatment of all forms of Neisserian infection." The preparation is marketed in the forms of tablets.

The Council on Pharmacy and Chemistry declared Neisser-San-Kahn inadmissible to New and Nonofficial Remedies on the following grounds:

1. It is an unoriginal preparation marketed under a proprietary, nondescriptive name. The rules of the Council provide that a proprietary name for a medicinal article shall be recognized only when the use of such an exclusive name is in the interest of the public welfare. In consideration of the benefits which may come from the discovery of a therapeutic agent the Council concedes to the person or firm which, by right of discovery, controls such a product the right to name it and offers no opposition to an arbitrary name for such a product. The combination presented by Neisser-San-Kahn and claimed to be zinc borosalicylate, however, is not the discovery of the York Laboratories and hence the Council cannot recognize the proprietary and nondescriptive name of this firm.
2. The therapeutic claims are not substantiated by acceptable evidence and are, therefore, unwarranted.
3. The available evidence fails to show that the preparation, claimed to be zinc borosalicylate, has any advantage over established zinc salts. The use of substances which are unessential modifications of established drugs is unscientific and serves no useful purpose and hence, in the absence of evidence of superiority over established zinc salts the use of this so-called zinc borosalicylate is not in the interest of rational therapy.

Dr. O. Pine queries: I have heard much of medical politics and medical politicians, but whoever has heard of medical statesmen and medical statesmanship? Why not?

Reasonable Confusion.—Dr. Owen Lee Day, of Roxmore, has been much annoyed in continually explaining to young mothers that group medicine is not croup medicine.

County Medical Societies

Adams—James P. Dalhey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Fred B. Wilson, M.D., Beaver.
Bedford—N. A. Timmins, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Siebert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—Maude C. Exley, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—George H. Hess, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Petersburg.
Indiana—James M. Torrence, M.D., Indiana.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Benjamin H. Ritter, M.D., McCoysville.
Lackawanna—Harry W. Albertson, M.D., Scranton.
Lancaster—Walter D. Blankenship, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Frederick R. Bausch, M.D., Allentown.
Luzerne—H. Irvin Evans, M.D., Ashley, Pa.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Mary A. Hipple, Philadelphia.
Potter—Robert B. Knight, M.D., Coudersport.
Schuylkill—George O. O. Santee, M.D., Cressona.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—Carl M. Bradford, M.D., Forksville.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Edward O. Bang, M.D., South Canaan.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

February, 1923

COUNTY SOCIETY REPORTS

BERKS—DECEMBER

At the December meeting of the Berks County Medical Society Dr. L. E. Evans, of Philadelphia, addressed the members on "The Relationship of the Physician to Compensation Insurance," abstract of which address follows:

From 85 to 90% of all industries that start operation fail. That leaves an average of only 10 to 15% that succeed. The greatest reason for this is the overhead expense, and the greatest item in overhead expense is labor. Thus we see that we cannot add unlimited sums to the cost of labor without adding to the percentage of industrial failures. As industry provides a living for our laborers we see that the cost of production must not be allowed to soar too high.

I believe that statistics will bear me out in the statement that only 5% of all accidents that occur to employees while at work can be laid to the carelessness or neglect of the employer or the condition of the plant, and that most accidents are due to the carelessness or neglect or inefficiency of the employee. The latter class of accidents is covered in the extra salary which the majority of men in hazardous occupations receive.

Compensation came into vogue through humane reasons, because the majority of employees do not save money, and when accidents which prevent the earning of a livelihood occur, both the employee and his family suffer want. Compensation was the result of coöperation between the employees, the employers, insurance companies and legislative representatives, in an endeavor to mitigate the unfortunate conditions that constantly arose.

Another element that entered into the consideration was that in the precompensation era the medical and surgical service rendered to the employee was frequently not skilled and the results were frequently not satisfactory. Even now you would be astounded to know of the many bad permanent results that the laboring man has to suffer the rest of his life as a result of inaccurate or careless treatment. Of course, this loss is not alone the loss of the laboring man, but also affects the employer and the insurance companies, and the extra financial loss to these as the result of incompetent medical handling amounts to a sum that you, as medical men, would hate to believe. I want you to feel that you have a great duty to fulfill in seeing to it that only the men get this industrial work that are competent to do it. This work may not be as remunerative as other work, but I believe that you will bear with me in the statement that we are not in the practice of medicine entirely for financial profit.

It is not just that industry should be taxed twice (both in extra salary for hazardous employment and in compensation) for the 95% of accidents that are not the fault of industry. If the employer will do his part, we as medical men should bear some responsibility, and if necessary, go beyond the requirements of the law rather than to allow a man to suffer after we have reached the legal requirements of attention.

It is true that among insurance carriers there are some who play the "paring" game. We have them in all walks of life. But I know, and statistics will back me up, that 98% of all surgical and hospital bills in compensation that is carried by insurance companies are paid a hundred cents on the dollar, and paid promptly.

You should play a large part in future compensation legislation, and should not leave it to those who are less interested. There are two dangers ahead, the greater one of which is state medicine, state clinics, individual clinics and the like, the result of which will be cheap and incompetent attention.

There seems to be considerable discussion among the medical fraternities of the state as to how they are going to be able to get more money out of compensation cases. A similar sentiment also exists among a certain type of hospitals. Yet, as stated before, if industry is being taxed to the limit on this type of expense, the only way the writer can see to secure additional recompense in this kind of cases is in helping to detect malingerers. When physicians are willing to help the insurance carriers to eliminate this 25 to 35% loss, they will then be in a position to ask that it be added to the medical expense. One good turn deserves another. There has to be a limit to everything, and usually there is a cause for the limit. Therefore, gentlemen, assist in saving the unnecessary loss in compensation; then "ask and ye shall receive."

Let us find the medical profession in the future interested in legislation on industrial compensation, not from a personal selfish standpoint but from the broad viewpoint of the benefit of the injured person and of humanity at large.

Clara Shetter Keiser, M.D., Reporter.

ELK—JANUARY

The annual meeting of the Elk County Medical Society was held at Ridgway, January 11th. Dinner was served at the New Hyde at 1 p.m., followed by a business meeting, which was held at the County Club at 2 o'clock.

The following officers were elected for 1923: President, Dr. Maurice T. Leary, Ridgway; vice-president, Dr. Walter M. Black, St. Marys; secretary, Dr. J. E. Madara, St. Marys; treasurer, Dr. M. M. Rankin, Ridgway; censor, Dr. J. W. Warnick, Johnsonburg; delegate to State Meeting, Dr. J. E. Madara; first alternate, Dr. S. G. Logan; second alternate, Dr. J. C. McAllister.

Dr. Albert F. Hardt, of Williamsport, read a very interesting paper on the so-called acute abdomen. The discussion was opened by Dr. Walter C. Shaw of Ridgway, after which a general discussion ensued, followed by some case reports.

The treasurer reported that there was enough money to pay all bills.

The secretary reported the loss of only one member during the year. The average attendance was about 33⅓%. Two-thirds of the members simply paid dues and let someone else do the work.

An assessment of $2.00 was levied for the Medical Legislative Conference. The question was asked, "Why did not the Conference get busy and amend the compensation law so that even Mr. Mackey or Mr. Test could understand what the intent is?" It is our feeling up here that we are going to get our just fee, the fee to which we are entitled, or know the reason why.

S. G. Logan, Reporter.

MERCER—JANUARY

The annual meeting of the Mercer County Medical Society was held at the Sharon Country Club, Sharon, on Thursday, January 11, 1923. Luncheon was served at 1 p.m., with twenty-seven members present.

Dr. J. H. Reed, the president, being away, the second vice-president, Dr. F. C. Potter, of Mercer, presided. The reports of the secretary and treasurer were read.

We were glad to receive the transfer card of Dr. W. W. Richardson from the Erie County Society, and Dr. Harold G. Lafferty, of Sharon, was elected to membership.

The following officers were elected for the year 1923: President, W. W. Richardson, Mercer; first vice-president, B. A. Montgomery, Grove City; second vice-president, P. E. Biggins, Sharpsville; secretary-reporter, Edith MacBride, Sharon; treasurer, Carl J. Mehler, Sharon; censor, F. O. Batteiger, Greenville.

Dr. A. M. O'Brien read resolutions on the death of Dr. A. E. Cattron, of Sharpsville, which were adopted.

Dr. John W. Boyce, of Pittsburgh, was on the program for a paper, "The Undersized Heart and Dynamic Aorta," but was unable to be present on account of illness.

Adjourned to meet in March.

Edith MacBride, Secretary-Reporter.

MIFFLIN—JANUARY

The annual banquet of the Mifflin County Medical Society and the regular January meeting were conjointly held at the Coleman House, Lewistown, Thursday evening, January 4th, and proved to be one of the most successful and enjoyable occasions ever held by the local society. The new president, Dr. C. M. Johnson, of McVeytown, was inaugurated, and a large number of members, with wives and invited guests were in attendance.

The banquet tables presented a holiday appearance, the turkey and "fixins" appealing to the most fastidious tastes of the banqueters. Dr. J. A. C. Clarkson presided over the postprandial ceremonies as toastmaster, and did so in a most acceptable manner, at the same time announcing his coming trip to Egypt and other Mediterranean countries, the trip beginning early in February.

The first toast was responded to by Dr. W. H. Kohler, who took the opportunity to deliver a most able address as retiring president. To his successor he extended congratulations and wished for him the same courteous treatment as was extended to him during the past year. Well attended meetings, interesting discussions, congenial associations and earnest coöperation have done much to make the past year one of encouragement and valuable aid in the efforts of the society to promote the best interests of the community and also the members. The Mifflin County Medical Society is marching onward, abreast of the times. The speaker then discussed political medicine, aptly remarking that it seemed strange that a profession that has done so much for humanity has done so little for itself, and then enumerated a number of legal changes that the profession should demand in the interests of both the public and the medical men.

Dr. R. T. Barnett next responded to the toast, "What Medical Science Has Done," and in a very interesting manner discussed the eradication of such scourges as smallpox, which, due to medical science, has become a curiosity. Ether and chloroform were boons contributed to a suffering humanity by medical science, as well as the antiseptics of Lister. Diphtheria, typhoid fever, malaria, yellow fever, to mention only the most prominent in the memory of the present generation as causes of innumerable deaths, are fast losing their mortality record, the speaker calling to mind that in his early practice it was a common event for a family to lose four or more members through death due to diphtheria.

"What Medical Science Will Do," was the subject of the toast responded to by Dr. O. M. Weaver, and in a most interesting and able manner, Dr. Weaver pointed out in prophecy what we can expect from the medical profession in the future, when preventive medicine will eradicate diseases now considered hopeless, such as tuberculosis, infantile paralysis, influenza, pneumonia, cancer, sarcoma, leprosy, and others. These diseases will in the future have their toxin-antitoxins. In this happy future it will be as easy for the physician to look into the lungs through the "Lookoscope," as it is now to examine the same organ through the stethoscope. Every physician will carry his own x-ray machine in as small a packet as the present medical case, and the entire human system will be an open book. Radium, now only in its infancy, will develop into an agent that will cure malignant tumors with one application, and the proper use of certain drugs and transplantation will defer old age, and make the fountain of everlasting youth obtainable by all who will apply. Dr. Weaver painted a most attractive picture of the future of medicine.

On the subject, "The Political Situation in the Near East," Dr. C. M. Johnson showed unusual information concerning the entanglement in that unhappy portion of the globe, saying that the conflict between Turkey and the European countries is hundreds of years old. Turkey was long known as "The Sick Man of Europe," but due to the diplomatic treachery of nations the sick man has recovered and is able to sit up at the conference table at Lausanne and to take a good deal of nourishment in the shape of restored territory. This country was invited to send a representative to the same conference, but refrained, and sent only an observer. Affairs, therefore, in the Near East have reached a stage where it is not difficult once more to hear the rattle of sabre and bayonet, and the outcome is very much in doubt. It is becoming more apparent each day to the best thinkers and the leading statesmen that had the United States entered the League of Nations, much of the unrest and the turmoil now existing would have been avoided. Our influence and support of the Allies would have strengthened their position.

The last toast of the evening was answered by Dr. F. A. Rupp, who tried to foresee "What Changes We Can Look for in the Religious World," saying, in the beginning of his address, that he realized that he was treading on dangerous ground when he as a medical man attempted to handle such a subject as the great and all-comprehensive one of Religion. Dr. Rupp stated that during the war the opinion was often expressed on forum and in press that the churches would have to be enlarged to receive the returning soldiers, whereas the fact was that it was a difficult matter to secure the presence of enough soldiers to hold services for demobilizing the service flags. And it was not because the soldiers were not religious. But war had taught them that real religion, as they thought, was life, not belief. The soldiers hated cowardice; they hated dishonesty. They loved bravery and honesty, and loyalty—and that was their religion. Hence the doctrines and dogma that separated the churches did not appeal to them. Religion did not prevent the Great War, and will not, as such, prevent future wars unless reconstructed. This new religion of the future must and will be based on tolerance. The new religion of the future will be based not upon doctrines and beliefs concerning or about the Christ, but wholly upon his ethics and teachings. The new religion will not be creed; it will be life. The speaker closed by saying that he believed that the principles of the Sermon on the Mount will be a pretty safe basis for the new religion of the future, a religion which will be able to unite the nations of the world; whereas the old religion of doctrine and intolerance tended only to separate the same nations.

F. A. RUPP, Reporter.

MONTGOMERY—DECEMBER

The regular meeting of the Montgomery County Medical Society was held at the Montgomery Hospital, Norristown, December 6, 1922. The following members were present: Drs. Shearer, Cloud, P. Lukens, G. Lukens, Yeakle, Logan, Wolfe, Parker, Irwin, Hartman, Fabbri, Bostock, Hunsberger, Elmer, McKenzie, Simpson, Doran McLaughlin,, Kriebel, W. G. Miller, Wright, Gotwals, Hunt, Reed, Sherborn, Garner, Little, G. W. Miller, Dill and Buyers.

Dr. Margaret Sturgis, of Ardmore, asked permission to transfer to the Philadelphia County Society. Upon motion, the request was granted subject to the approval of the councilor.

The secretary read a communication from Dr. Walter Donaldson, Secretary of the State Society, requesting the society to avail itself of the privilege of a postgraduate course under the direction of the University of Pennsylvania. Upon motion, this subject was referred to the trustees to report back to the society at a subsequent meeting.

Dr. E. A. Krusen presented the following resolution, which was unanimously passed:

Resolved, That we, the members of the Montgomery County Medical Society, unanimously recommend the appointment of Dr. George Alexander Knowles, of Philadelphia, to the office of Commissioner of Health.

Dr. Krusen also presented the following resolution, which was passed:

WHEREAS, The ruling of Chairman Mackey, of the State Compensation Board, that physicians who are members of staffs of hospitals which receive state aid have no right to charge for their professional services rendered in industrial cases received in the wards of our hospitals, is in direct opposition to the intent of the Compensation Act when passed, and is considered unfair and unjust and to militate against the welfare of both physicians and patients, and is condemned by this society as unjust legislation. In view of this fact, therefore, be it

Resolved, That we, the members of the Montgomery County Medical Society, appeal to His Excellency, the Governor of Pennsylvania, and the Legislature, through the Medical Legislative Conference of Pennsylvania, to have them so amend the Workmen's Compensation Act that the original intent of the bill may be made applicable; namely, that the hospitals and the attending physicians, whether on a hospital staff or not, shall have reasonable compensation for their respective services.

Dr. A. L. Dewees made the following motion, which was seconded and carried: *Resolved,* That this society urge upon the Montgomery County Commissioners the taking of prompt action towards securing the County Tuberculosis Hospital authorized at the last election.

Dr. W. G. Miller moved that a committee of five be appointed to take up this matter with the commissioners. Seconded and carried.

Dr. Bostock then read an excellent paper on "Vagitus Uterinus (A Voice From the Womb)."

JOHN C. SIMPSON, M.D., Reporter.

NORTHAMPTON—DECEMBER

The regular monthly meeting of the Northampton County Medical Society was held on December 15th at the Hotel Bethlehem, Bethlehem, with President Delbert K. Santee presiding. There were thirty-eight members present not including the speakers, Judge Robert A. Stotz and Doctor Donnelly. All partook of luncheon as the guests of the society.

The meeting was called to order at 11:15 a. m. The minutes of the November meeting were read, and approved as read.

A communication from Judges Stewart and McKeen was read, saying that "if possible" they would attend our next meeting to listen to the talk of Judge Stotz, and that Judge Stotz would be present on time the judges "so agreed."

A communication from the United States Veterans' Bureau was read with regard to a "special course in Neuropsychiatry to be given to a certain number of qualified physicians under certain conditions." The secretary stated that any member interested could read the whole letter with full details.

A letter was read from Dr. J. B. Deaver, of Philadelphia, expressing regrets at his inability to attend and address us at this, our December meeting.

Dr. Estes, Sr., read several letters regarding legislative matters to which his committee is giving thought and consideration.

The censors, Dr. Walker, chairman, reported that they had the applications of Drs. Gaines, Boyer, Kline and Ott for membership in the society. They reported favorably on Drs. Gaines and Boyer and recommended their election and deferred action on the latter two. Dr. Estes, Sr., moved, seconded by Dr. Tillman, that the report of the censors with their recommendation be accepted, the secretary to cast the ballot for Drs. Gaines and Boyer, which was accordingly done, and the president declared them duly elected to membership.

The Postgraduate Committee, Dr. Schmoyer, chairman, made their report with the recommendation that two committees be appointed, representing Bethlehem and Easton, to further the proposition, which was on motion of Dr. Catherall, seconded by Dr. Thomason, accepted. The President accordingly appointed Drs. Schmoyer and Dever for Bethlehem, and Drs. Green and Phillips for the Easton district.

Dr. Rohrbach, Chairman of the Medical Milk Commission, made a report that their committee had organized and were ready to function and to certify to milk of the required quality. They reported that they had the applications from Mr. Case of Frenchtown, New Jersey, proprietor of the Delview Farms, and from the Richards Estate, better known as the Grammanna Dairy Company, also of New Jersey. He further stated that Dr. Pohl, of Nazareth, found it impossible to serve and asked that another physician be appointed. Accordingly, the president appointed Dr. Phillips to take the place of Dr. Pohl.

The Necrology Committee, appointed to draw up suitable resolutions on the death of our esteemed member, Dr. Arthur Donald Reagan, presented their resolutions which were, on motion, accepted, with the recommendation that "this record be inserted in the minutes of our proceedings and a copy sent to his wife and family."

An invitation from the Lehigh Valley Dental Society to attend their coming meeting, to be held on December 18th at the Bethlehem Hotel, was received. It was the wish of the society that as many of our members attend as could find time.

A letter addressed to Dr. Santee seeking the endorsement of Dr. Knowles, of Philadelphia, for the next Commissioner of Health, under the Pinchot régime, was read at the suggestion of Dr. Estes, Sr. Several members made complimentary remarks about Dr. Knowles but it was thought discreet to ascertain first all of the men in the field for the position before the society would or should endorse any one advisedly. The secretary was instructed to try to ascertain the names of all men in the field.

The president next introduced Dr. Donnelly, Assistant Chief, Division of Child Health, Department of Health, who spoke pointedly about "Our Baby Work." His talk was appreciated; for he explained the "hows," "whys" and "wherefores" of the aims and desires which they were to accomplish. His address was both defensive and explanatory. At the close of his remarks several members present asked some pertinent questions, all of which he ably explained, defending the Department's position. He made it plain that his department sought the help and advice of the medical profession, locally, working towards coöperation for the local needs.

President Santee next introduced Judge Stotz, the principal speaker of the day, who spoke learnedly of the importance of courts and the need for laws in the procurement of justice. The Judge is an apt storyteller and realizes the true virtue of medicine. He advised us to be true physicians and not to be mere "pill peddlers."

The president asked for a rising vote of thanks for the two speakers, which was heartily responded to, and declared the meeting adjourned, inviting all present to partake of lunch.

William A. Finady, Reporter.

WARREN—DECEMBER-JANUARY

The December meeting of the Society was devoted largely to a conference with the newly elected assemblyman from this county. Dr. Mitchell spoke of the aims of the medical profession and the desire to influence legislation only in so far as it pertains to the general good. He spoke of the One Board Bill and its merits. Representative Wood promised to give careful attention to the wants of the medical profession and said heretofore the profession seemed to be but little interested in legislation and he voted for legislation according to the interest shown for or against it.

Dr. Robertson reported the result of his experiences with the treatment of certain types of cancer by the injection of chloride of zinc. In many cases that he has been able to watch for a number of years the results seem to be as favorable as by excision.

The January meeting occurred Monday, the 15th, and was in the nature of a testimonial banquet in honor of Dr. Paul G. Weston. Dr. Weston resigned as Pathologist to the State Hospital after twelve years' service. During this period he brought up the work of the laboratory so that it is second to none in the state. He introduced general typhoid immunization among the inmates of the institution and also a routine Wassermann. Throughout the neighborhood Dr. Weston's services were very much in demand, not only for laboratory tests but as a general consultant, and the physicians of this community relied upon his judgment very much. His going is considered a great loss to Warren County.

The dinner was attended by twenty-two members and one guest. Resolutions of regret were adopted and as a memento, a beautiful pipe was presented to Dr. Weston. The Doctor is undecided as to his future location. After a real vacation he wants to settle down to consultation practice. As he has not resigned from our society we hope he will settle down among us, as there is plenty of room for a man of his attainments and ability.

The election of officers which took place after the banquet resulted as follows: President, Dr. Ralph H. Knapp, Youngsville; first vice-president, Dr. Irving G. Hyer, Clarendon; second vice-president, Dr. E. J. Cowden, North Warren; secretary-treasurer, Dr. Elizabeth S. Beaty, Warren; Censors, Drs. Baker, Young and Smith; district censor, Dr. Christian J. Frantz; program committee, Drs. Hamilton, Mary Mitchell and Briggs; reporter, Dr. Ball.

Dr. Litchfield, the President of the State Society, will be asked to hold a clinic before our society shortly.

M. V. Ball, Reporter.

STATE NEWS ITEMS

DEATHS

Dr. George F. Garinger, of Asherton, aged 72 years, died on December 2d. He was graduated from Jefferson Medical College of Philadelphia in 1873.

Dr. Walter M. Hornby, of Philadelphia, aged 51 years, died on December 28th. He was a graduate of the Medico-Chirurgical College of Philadelphia, class of 1895.

Dr. Wm. H. Morrison, of Philadelphia, died on December 31st. He was born in 1856 and was graduated from the University of Pennsylvania School of Medicine in 1880.

Dr. Robert Cofer Barrett, of Philadelphia, aged 37 years, died on December 5th. Dr. Barrett was graduated from the Medical College of Virginia, Richmond, Va., in 1914.

Dr. William Chambers Powell, of Bryn Mawr, aged 65 years, died on December 2d. He was graduated from Hahnemann Medical College and Hospital of Philadelphia in 1879.

Dr. Milton B. Fretz, of Palmyra, died on December 22d. Dr. Fretz was born in 1850 and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1871.

Dr. William Tonkin, of Reading, aged 66 years, died on December 9th from cerebral hemorrhage. He was graduated from the Hahnemann Medical College and Hospital of Philadelphia in 1886.

Dr. James J. McNulty, of Philadelphia, aged 43 years, died on December 15th from cerebral hemorrhage. He was a graduate of the Medico-Chirurgical College of Philadelphia, class of 1903.

Dr. Orson T. Staufft, of Pittsburgh, who was born in Nebraska City, Neb., in 1858, and was graduated from the Western Reserve University School of Medicine, Cleveland, Ohio, in 1883, died on December 23d.

Dr. John Dickinson Mast, of Reamstown, aged 34 years, died on December 12th at St. Joseph's Hospital, Lancaster, from typhoid fever. Dr. Mast was graduated from Hahnemann Medical College and Hospital of Philadelphia, in 1919.

Dr. Isaac N. Woodman, of Morrisville, formerly of Costilla, N. M., died on December 14th from cerebral hemorrhage. Dr. Woodman was born in 1869 and was graduated from Hahnemann Medical College and Hospital of Philadelphia in 1893.

Dr. Blanche Josephine Barrus, of Philadelphia, aged 34 years, died on November 23d at the home of her brother in Clinton, N. C., of carcinoma of the stomach. Dr. Barrus was graduated from the Woman's Medical College of Pennsylvania in 1920.

Dr. Franklin Watson, of Willow Grove, was found dead in his office on Christmas morning. He was born in 1862 and was graduated from Hahnemann Medical College and Hospital of Philadelphia, in 1897. He was an active member of the Bucks County Medical Society.

Dr. Fuller S. Derr died at his home in Watsontown on December 6th, following an attack of acute indigestion. Dr. Derr was born in 1860 and was graduated from Jefferson Medical College of Philadelphia in 1884. He served for many years as surgeon for the Pennsylvania Railroad at Watsontown.

Dr. S. Howard Wilson, of Mechanicsville, formerly a member of the Bucks County Medical Society, died at his home on December 18th following a protracted illness from diabetes mellitus. He was graduated from Jefferson Medical College of Philadelphia in 1881 and was 67 years old at the time of his death. He is survived by his widow, a brother and two sisters.

Dr. Henry Garey, formerly of Berlin and for a number of years a member of the Somerset County Medical Society, died at the home of a daughter in Pittsburgh on December 18th, aged 94 years. Dr. Garey was graduated from Jefferson Medical College of Philadelphia in 1884 and was a Confederate veteran of the Civil War, having been surgeon of a Mississippi cavalry regiment.

Dr. Geo. G. Ross, Philadelphia surgeon, died in the Lankenau Hospital of Philadelphia, on December 28th, after an illness of three weeks. Dr. Ross was a graduate of the University of Pennsylvania School of Medicine, class of 1891, and prior to his death was on the surgical staffs of the Lankenau, Methodist, Germantown and University Hospitals of Philadelphia. He was 56 years old, and is survived by his widow and two daughters.

Dr. Harley J. Butte, of Philadelphia, aged 52 years, was found dead in his home on January 12th from illuminating gas poisoning. Dr. Butte was a graduate of the Universities of Nebraska and Pennsylvania. He attained considerable prominence in the medical world through his laboratory research work and was regarded as a medico-legal expert. In the early nineties he was a personal friend of General Pershing, who at the time was a lieutenant in the army.

Miss Beatrice Margaret Ross, daughter of Dr. S. P. Ross, of Philadelphia, was burned to death on the night of January 15th by flames from an alcohol lamp in the home of her uncle in Ottawa. Miss Ross, who was 24 years old, had been a student nurse in training at the Royal Victory Hospital in Montreal until two years ago, when her uncle, John B. Fraser, lumberman and president of the Bank of Ottawa, asked her to come to his home. At the time of the accident Miss Ross was preparing a Turkish bath for her uncle, who has been ill for years, and it is believed the alcohol lamp exploded.

After an illness of six weeks, Dr. John H. MacCreary, a retired physician and Civil War veteran, died on January 16th at the home of his son-in-law, J. Walter Fox, at Highland Park, Delaware County. He was 79 years old. For several years Dr. MacCreary was prominent in state medical circles, serving as superintendent of the Pittston and Lancaster County Hospitals and assistant superintendent of the State Hospitals at Harrisburg and at Wernersville. He was graduated from the University of Pennsylvania School of Medicine with the class of 1866. After graduation he practiced medicine in Lancaster County for some time before receiving his first appointment as superintendent of the Pittston Hospital.

BIRTHS

Dr. and Mrs. George Morris Dorrance, of Philadelphia, are receiving congratulations upon the birth of a son, George Morris Dorrance, Jr.

Dr. and Mrs. Cornelius T. McCarthy, of Philadelphia, are being congratulated upon the birth of a daughter, Rose Mary McCarthy, on December 1st.

Dr. and Mrs. A. Graeme Mitchell, of Philadelphia, are being congratulated upon the birth of twin daughters, Kathryn Wentz Mitchell and Marie Graeme Mitchell, on December 2d.

MARRIAGES

Miss Louise Antoinette Smith, of Richmond Hill, N. Y., became the bride of Aubin Tilden King, Captain, M. C., U. S. Army, Carlisle Barracks, Carlisle, on December 16th.

Dr. and Mrs. Joseph M. Corson, of Hughesville, announce the marriage on November 10th, of their son, Dr. J. Allen Corson, to Miss Grace A. Smith, of Parsons, at which place he is practicing medicine.

ITEMS

Will those members of the Medical Society of the State of Pennsylvania whose wives or daughters are expecting to accompany them to the meeting of the American Medical Association to be held in San Francisco next June, kindly send their names as soon as possible to the Secretary of the Society, Dr. Walter F. Donaldson, 8103 Jenkins Arcade, Pittsburgh, Pa.

Dr. Cameron Shultz, of Danville, has gone to Florida for his annual winter visit.

Dr. C. P. Large, of Meyersdale, who has been seriously ill from recurrence of gastric ulcer, is again able to be about.

Dr. Joseph H. Reed and Mrs. Reed, of Sharon, are spending a month at the Battle Creek Sanitarium, Battle Creek, Michigan.

The apartment of Dr. George Morley Marshall, of Philadelphia, was entered on the evening of December 28th by a thief, who got away with clothing valued at about $100.

A memorial tablet was unveiled by the Keystone Club of Chester in honor of Dr. J. L. Forwood, first president of the Delaware County Medical Society, at a watch service on the evening of December 31st, to which meeting the members of the Delaware County Society and their families were invited.

Dr. Clair S. Bauman, of Lock Haven, has accepted the post of company physician at Calcutta, India, with the Ludlow Manufacturing Company of Boston, Mass. Accompanied by his wife, he will sail for India sometime in May. Dr. Bauman graduated from the Harvard Medical School in 1921.

Dr. Herschel S. Walker, of Philadelphia, sailed from New York for Greece on January 6th to aid in work among the refugees there. He established a model child-feeding district in Russia for the American Red Cross some time ago, and supervised the feeding of 35,000 children and 15,000 adult refugees.

The thirty-first annual meeting and conference of the Pennsylvania Tuberculosis Society was held in Harrisburg January 17, 18 and 19, 1923, with headquarters at the Penn-Harris Hotel. Among those who took part in the program were Hon. Gifford Pinchot, Governor of Pennsylvania; Dr. Haven Emerson, of Columbia University; C. E. Turner, of the Massachusetts Institute of Technology, Boston; Dr. H. A. Pattison, of the National Tuberculosis Association; and Dr. C. A. Greenleaf, President, Cattaragus County, New York, Tuberculosis Society, Olean, N. Y.

NATIONAL CELEBRATION OF THE CENTENARY OF THE BIRTH OF LOUIS PASTEUR

On the afternoon and evening of December 27, 1922, in the Academy of Music and the Bellevue-Stratford Hotel, Philadelphia, a most instructive as well as entertaining program was presented by the General Committee, composed of the following: Dr. Wm. Duffield Robinson, Chairman; Dr. McCluney Radcliffe, Secretary; Dr. Judson Daland, Treasurer, and Drs. Edgar Fahs Smith, Ernest Laplace, F. X. Dercum, Chas. A. E. Codman and Wilmer Krusen.

Dr. Edgar Fahs Smith was the presiding officer of the meeting at the Academy of Music in the afternoon, and the following speakers addressed a large assemblage of people: Dr. Russell H. Chittenden, of Yale University, New Haven, Conn., on "Pasteur in Chemistry"; Dr. Vernon Kellogg, of Washington, D. C., on "Pasteur in Relation to Biology"; Dr. John B. Deaver, of the University of Pennsylvania, on "Modern Surgery's Debt to Pasteur"; Dr. Hugh S. Cumming, Surgeon-General, Bureau of Public Health Service, Washington, D. C., on "Pasteur's Influence on Public Health"; and M. Jules Jusserand, Ambassador of the French Republic, Washington, D. C., on "Pasteur as a Man Among Men."

At the evening dinner the toastmaster, Dr. Ernest Laplace, was introduced by Dr. W. D. Robinson, and the divine invocation was made by the Rev. Floyd W. Tomkins. During the dinner the following addresses were delivered, which were especially enjoyed by many ladies present as well as members of our profession and interested laymen: "A Message from France," by M. Burnet, Special Delegate of the French Government, Director of the Pasteur Institute, Tunis; "Pasteur the Man," by Dr. Robert Abbe, New York; "Pasteur and Science," by Dr. H. S. Pritchett, President of the Carnegie Foundation, New York; "Pasteur and Surgery," by Dr. Lewis S. McMurtry, of the University of Louisville, Louisville, Ky.; and "Pasteur and Medicine," by Dr. Hobert A. Hare, of Jefferson Medical College, Philadelphia.

The 100th anniversary of the birth of Louis Pasteur was most fittingly celebrated, and those who were not present missed the opportunity of enjoying a rare treat. The committee is to be congratulated on the splendid array of talent secured to present these programs.

GENERAL NEWS ITEMS

Dr. M. Dorset, of the Bureau of Animal Industry, United States Department of Agriculture, recently returned from London, where, on December 5th, he attended in an unofficial and consultative capacity, a meeting of the International Advisory Committee on the Prevention of Anthrax, a committee made up of delegates from England, India, Australia, Italy, Sweden, Germany, France, Union of South Africa, and Belgium. This body, which reports to the International Labor Office of the League of Nations, has for its principal object the study of methods of disinfecting wool, hides, hair, and similar products so as to protect workmen from the danger of infection with anthrax, a fatal blood disease of many domestic animals which is also very dangerous to humans and is sometimes known as "wool sorters' disease."

England has been particularly active in taking steps to eliminate the danger of infection of workmen in wool-handling establishments, and the committee agreed that for wool the English method seems to be effective. Those who attended the conference were taken to Liverpool at the expense of the British Government to inspect a large disinfecting plant constructed at a cost of $750,000. The cost of disinfecting wool brought into the country is said to be approximately 3 cents a pound.

The committee decided that in addition to disinfection precautions it is advisable to prepare a list of countries from which wool can be imported with safety without disinfection. It was recommended that hair and bristles always be disinfected and that under certain conditions wool should be. In making up the list of countries from which wool can be admitted with safety without disinfection it was suggested the decision should be based upon the prevalence of cases of human anthrax in industries, the occurrence of the bacilli in products, and the precautions that are taken by the various countries to prevent the spread of the disease among animals.

Although wool can be disinfected successfully, no method has yet been devised whereby hides and skins can be effectively treated without damaging them, and it seems advisable, according to resolutions adopted by the committee, for all countries concerned to make efforts to discover a suitable method.

So far there seems to be little cause for alarm over the danger of anthrax to workers in the United States. The best figures available show that in the eight years up to and including 1917 there were only 222 deaths of humans from anthrax in this country. Of these only about 25 or 30 per cent were of industrial workers. About 20 per cent of the deaths during this period were of farmers who became infected in most cases as a result of skinning animals that died on the farms. There is no protection against this kind of infection except burying animals dead from unknown causes without trying to salvage the hides. Those who handle wool, hides, and hair at docks also would not be protected by disinfection which must be done after the wool has been unloaded and taken to the disinfecting plant.

Now and then stories have been published of cases of anthrax that have been contracted as a result of infected shaving brushes made of horsehair. Brush manufacturers in this country some time ago agreed to use no more horsehair in the manufacture of brushes of this kind.

"Endocrine and Other Organotherapeutic Preparations" is the title of a booklet just issued by Armour and Company. This pamphlet contains articles upon the products that the title covers. A copy of it will be mailed to any physician or pharmacist who asks for it.

BOOKS RECEIVED

Physical Diagnosis by W. D. Rose, M.D., Lecturer on Physical Diagnosis and Associate Professor of Medicine in the Univerity of Arkansas, etc. Third Edition. Three hundred and nineteen illustrations. St. Louis: C. V. Mosby Company, 1922. Price $8.50.

Physiology and Biochemistry in Modern Medicine, by J. J. R. Macleod, M.B., Professor of Physiology in the University of Toronto, Toronto, Canada. Assisted by Roy G. Pearce, A. C. Redfield, and N. B. Taylor and by others. Fourth edition with 243 illustrations, including 9 plates in colors. St. Louis: C. V. Mosby Company, 1922. Price $11.00.

BOOK REVIEW

DISEASES OF THE SKIN. Second Edition by Dr. Henry H. Hazen. Published by C. V. Mosby Co., St. Louis, Mo.

The second edition of Hazen's handbook of Diseases of the Skin has been amplified by the addition of chapters on cutaneous disturbances due to the vegetative nervous system and likewise by reference to a few of the rarer affections of the skin. The author has written elsewhere on dermatoses due to the vegetative nervous system and the several pages on this subject, though brief, are clear and illuminating. The author's classification of diseases of the skin is unusual and not entirely logical, inasmuch as it is in part based upon etiological considerations and in part upon clinical and pathological criteria. It must be admitted, however, that classification is a very difficult task and no classification has yet been suggested which is entirely free from criticism.

The work in general has the self-imposed limitations of a handbook. One cannot treat adequately all of the known diseases of the skin within a compass of 600 pages. The author has done very well under the circumstances. Handbooks of this character are appreciated by the student and practitioner, inasmuch as the reader can obtain and assimilate the essentials without much waste of time.

The chapters on general etiology, diagnosis, symptomatology and treatment are excellently presented.

From a typographic standpoint no possible criticism can be offered. The paper is excellent, the printing most readable and the illustrations numerous and well selected.

Many of the suggestions on the treatment of the various dermatoses will be found extremely helpful to the practitioner at large. The book is a safe and sane presentation of our knowledge of dermatology and should prove a valuable aid to students and physicians.

J. F. S.

DISEASES OF INFANCY AND CHILDHOOD; THEIR DIETETIC, HYGIENIC AND MEDICAL TREATMENT. A textbook designed for practitioners and students in medicine. By Louis Fischer, M.D., Attending Physician to the Willard Parker and Riverside Hospitals of New York City; Physician in Charge of the Infantorium; Former Instructor on Diseases of Children at the New York Postgraduate Medical School and Hospital, etc. Ninth revised edition. Volume I, Infant Feeding and Organic Diseases. Cloth, 603 pages, with 146 text illustrations, several in colors, and 37 full-page half-tone and color plates. Volume II, Infectious Diseases—Cerebral-Orthopedic and Eye, Ear, Skin, etc. Cloth, 548 pages, with 147 text illustrations, several in colors, and 43 full-page half-tone and color plates. Philadelphia: F. A. Davis Company, Publishers, 1922. Price, 2 volumes, $12.00.

This edition of Fischer's standard work on pediatrics appears in two volumes. Volume I deals with a general outline of the anatomy and physiology of the infant, especially of its digestive tract. Maternal feeding with complementary and supplementary feeding is fully described. More than one-third of the first volume is taken up with infant feeding, and as this has always been the strong point in Fischer's book, it is of course characteristic as well as satisfying. A chapter is devoted to the Pelidisi method of caloric and percentage feeding. The vitamines, without which no book on pediatrics would be considered complete, are fully discussed. Roentgenology as a diagnostic and therapeutic aid is described and well illustrated. The illustrations of this volume are very good, special attention should be drawn to the colored pictures of infant stools.

Volume II takes up the acute infectious diseases. This book contains a chapter on transfusion that is up to date and well written. Lumbar puncture and its application in differential diagnosis, as well as treatment, is described. Under the same heading some little space is given ventricular aspiration and intracranial injections, but we find no reference to cistern puncture.

This is really a pretentious work and so well demonstrates how the point of view of the pediatrist has broadened in the last few years. This is very evident in the outlining of the management of renal conditions. Here we find the physiological and pathological conditions of the urine as well as tests for kidney efficiency described in detail. A. J. S.

AN ESSAY ON PHYSIOLOGY OF MIND. By Francis X. Dercum, M.D., Ph.D., Professor of Nervous and Mental Diseases in the Jefferson Medical College, Philadelphia. 12mo of 150 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $1.75 net.

The text is "An Essay on the Physiology of the Mind. An interpretation based on Biological, Morphological, Physical and Chemical Considerations." An addendum on the pathological physiology of the mind is also added. The author, in a masterful, forceful and logical style, adheres to the study under consideration as outlined in his foreword and presents basic facts of those reactions of the organism to the environment which, under given conditions, manifest the qualities which we speak of as mind. He reviews at length studies of the protoplasm, its peculiarities, its ceaseless chemical changes, its up-building reduction, and its reaction and lack of reaction to incident forces of the physical world, as well as its reception and transmission of force. In the study of the protoplasm of cells of all forms of life, the author finds properties which are similar to the protoplasm making up the cells of the brain and cord.

The author regards the telencephalon with its communities of neurons as the site of consciousness, that consciousness is constantly changing from the immediate present to the immediate past and passing into the immediate future, such changes depending on the force of impact of stimuli and the reaction of the neuron or communities of neurons. The stimuli may be external or physical, or may be chemical, arising within the individual, such as from toxins or internal secretions. Around the theory of the cell protoplasm of the neuron, the associated tracts, synapses and force transmission resulting from physical or chemical stimuli, the author builds his study of intellect, feeling and will.

The text will prove interesting not only to physicians, especially psychiatrists, but to students of psychology as well, the author having obtained his object of presentation in such a manner that the subject would not be too technical for lay readers. J. A. J.

THE SURGICAL CLINICS OF NORTH AMERICA, June, 1922. Chicago Number.

Dr. D. C. Strauss: *Recent Gunshot Wounds of Kidney; Four Cases.*—The following treatment is advised:

1. Inspect urine for blood (catheterize if necessary).
2. Treat shock in the usual manner—by warmth and transfusion.
3. If in doubt whether or not to operate, the most prudent decision is usually the wisest.
4. If in doubt whether to open the abdomen or loin first, open the loin.
5. The loin incision should be transverse and should extend approximately to the edge of the rectus. It may be enlarged by a vertical incision along the outer border of the erector spinæ muscle long enough to permit division of all muscular ligamentous attachments to the last rib. The twelfth dorsal nerve and artery may be avoided by placing the transverse incision a fingerbreadth below the rib. Thus also one avoids the danger of inadvertently entering the pleura through mistaking the eleventh for the twelfth rib.
6. If there is a wound of the loin and hematuria, or if wound plainly leads to the kidney, enlarge it transversely, deliver the kidney, and examine the hilum for lesions of the renal vessels.

(a) If the main artery or vein, or the upper main branch of the artery is wounded, perform nephrectomy.

(b) If smaller arteries, or the lower branch of the renal artery, are wounded, excise a cone-shaped portion of the kidney, corresponding to the area supplied by this vessel.

(c) Excise contused parenchyma in the neighborhood of the wound.

(d) Explore the renal pelvis for foreign bodies with the finger or probe.

(e) Suture a torn pelvis with interrupted plain catgut. Use no silk or other permanent sutures for fear of secondary stone formation or persistent fistula. There is no need to suture the pelvis with great nicety. The wound will heal if the ureter drains properly.

(f) In order to insure ureteral drainage and to prevent blood-clot from blacking its orifice, lead a split tube or a few strands of silkworm-gut into the upper end of the ureter (to be removed in forty-eight hours).

(g) Suture the parenchyma with heavy, plain catgut, deep sutures about 2 cm. apart, if necessary interposing more superficial sutures to stop bleeding. All deep sutures should be placed at right angles to the long axis of the kidney in order not to obstruct the arteries.

A small tube should be left in the pelvis of the kidney two days, if this has been opened, in order to evacuate blood-clots and to hasten the return of kidney function by removing intrapelvic pressure.

(h) Always open the peritoneum in front of the colon in order to examine the adjacent viscera.

(i) Drain and suture the wound in the usual manner.

7. If more than one-third of the kidney is contused, perform complete nephrectomy; if less, resection may be considered.
8. If hematuria suggests a renal injury but the wound is remote from the loin, the decision in favor of or against immediate operation should be based on the following data:

(a) If the patient is going to die of primary renal hemorrhage he is likely to do so before reaching the dressing station.

(b) Though exploration of renal wounds usually starts a fresh parenchymatous hemorrhage, it discloses the fact that the primary bleeding has already stopped.

(c) Therefore, unless an external wound leads directly to the kidney region, the presence of hematuria or of retroperitoneal hematoma is no indication for immediate operation.

9. A retroperitoneal hemorrhage, discovered in the course of a laparotomy, may be disregarded (it often does not arise from the renal vessels at all) unless it is of enormous size, in which event it should be evacuated extraperitoneally before the intestines are much handled, for it has been found that immediate grave shock results from turning the patient over and operating upon his loin after laparotomy.
10. Transperitoneal nephrectomy is generally condemned.

Dr. A. J. Ochsner: *Removal of Renal Calculus from Pelvis of Floating Kidney, the Second Kidney Being Absent.*—A patient who had had a nephrectomy two years previously returned to the hospital because of attacks of renal colic on the opposite side, with bloody urine and the passage of a sharp-pointed stone. Physical examination showed the presence of floating kidney. An operation was performed which resulted in the removal of a stone from the lower calix of the kidney.

The solitary kidney was freely movable. There was a typical history of intermittent hydronephrosis with complete anuria, relieved by manipulation of the kidney. If urgent, anuria due to complete impaction of stone could be relieved by a pyelotomy under local anesthesia, delaying the removal of the stone to a more favorable time.

In operating on a solitary kidney the incidental peculiar problems are: (1) to avoid kinking of ureter by displacement of kidney, or cicatrical contraction due to postoperative infection; and (2) to handle the kidney tissue gently. Local anesthesia is used. The kidney is firmly anchored by its capsule to the twelfth rib and muscle aponeurosis in order to prevent displacement. A rubber drain, together with two cigaret drains, is inserted down to the ureter. In the case under discussion on the twenty-third day after operation, a pocket of urine about the wound was evacuated, and within three weeks all urine was passing by the bladder.

In order to prevent the formation of more renal stones the patient should drink distilled and not ordinary well water, in quantities of one-half gallon every day.

Dr. C. L. Mix: *"Dumping Stomach" Following Gastrojejunostomy.*—In a patient suffering from se-

(Continued on page xiv)

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(Continued from page 354)

vere gastric disturbances following gastrojejunostomy, a fluoroscopic examination revealed a "dumping stomach." An operation was performed to unhook the gastrojejunostomy.

The x-ray showed anastomosis between the greater curvature and the small intestine far beyond the first loop of jejunum. The stomach would not retain barium meal at all. It shot immediately into the small bowel. The patient might as well have had a gastrectomy done. Her weight was reduced from 130 to 103 pounds. She suffered pain and vomited everything she ate. The Rehfuss tube did not aspirate a drop of the test meal; the stomach was apparently dry. The patient showed acetone and diacetic acid, due to starvation.

There are four reasons for gastro-enterostomy: (a) threatening perforation ,(b) persistent hemorrhage, (c) narrowed pylorus, (d) failure to cure by diet. At operation the stomach and bowel were unhooked and each closed separately. Gastro-enterostomy was wholly unnecessary for relief of her symptoms eight years before, due to ulcer of the gastric side of the pylorus. Suitable diatetic treatment would have cured her.

Dr. J. R. Pennington: *Hemorrhoidectomy by the "Open" Method.*—The following method of operation is advocated: (a) Eversion of terminal rectum, bringing internal hemorrhoids into full view. (b) From the skin side press the pile forward with the left index finger, and with the scissors clip off an ellipse of mucous membrane and pile-bearing tissue. (c) Ligate all bleeding points (d) Do not suture mucous membrane. (e) For external hemorrhoids make traction on the skin covering them and treat as for the internal type. (f) Introduce a rubber-covered tampon.

The patient may be discharged from the hospital in three days. Statistics in this method of operation compare favorably with other methods, such as clamp and cautery, ligation and Whitehead. There are six illustrations.

Dr. A. A. Strauss: *Surgical Treatment of Carcinoma of the Colon with a New Method of Making the Operative Field Extraperitoneal by Means of the Omentum.*—Two illustrative cases are presented. The first is a cancer located in the lower sigmoid or upper rectum. Operation was as follows: (a) Resection of mass between clamps. (b) A purse-string was thrown about each amputated segment of bowel, each enclosing a rubber catheter, passing out through the anus. (c) The anal segment was first everted, then through it the upper segment was next everted, making a sleeve apposition, which was then anastomosed outside the anus. (d) After this the anatomosed bowel was pulled back into situ through the abdominal opening, the anastomosis being below the reflection of the peritoneum—the surgical procedure being extraperitoneal.

In the second case a cancer was located in the upper sigmoid. The operation is described as follows: After anastomosis detach the omentum half way across from the pyloric end of the stomach to give a mobile end. Wrap the left border of the omentum about the outer anastomosed surface of the bowel, the median half about the inner anastomosed surface of the bowel; then attach the border which was freed from the stomach all around the parietal peritoneum, thus shutting off the operated colon from the general abdominal cavity. Illustrations of the transverse cuts are really necessary to a clear understanding of the disposal of the omentum. (See reviews of colonic surgery in the August and October issues of the Journal.)

Dr. A. E. Halsted: *Use of Free Fascial Transplants to Replace Defects in Dura.*—The best material for this work is the fascia of the same individual. Its advantages are: (a) Firmness, (b) Resemblance to histologic structure of the dura, (c) Accessibility, (d) Possibility of obtaining it aseptically, (e) Its nutrition

(Continued on page xvi)

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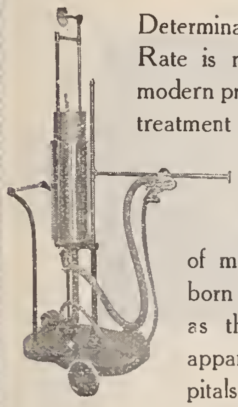

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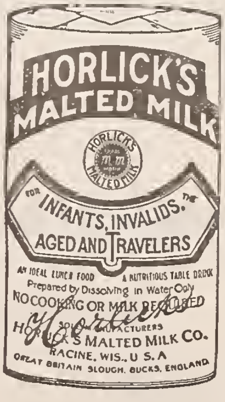
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(Continued from page xiv)

is readily maintained under unfavorable circumstances. To overcome the disadvantage of the small amount of endothelial coating, a portion of the subcutaneous fat is left attached to the fascia lata and the transplant is inserted with the fat side toward the brain. The article contains 8 illustrations and 10 references—all German.

DRS. BEVAN AND GILL: *Endothelioma of the Spinal Cord.*—A review of a similar clinic will be found in the October issue of this JOURNAL, page 55.

DR. A. D. BEVAN: *Carcinoma of the Stomach; Resection by Billroth Method Number Two.*—The technic is given in clear detail. The chief advantage in this method of partial gastrectomy, pylorectomy and partial duodectomy is the removal of the cancer zone of the stomach—especially in cases which are doubtful after inspection. Bevan questions the theory that cancer of this region is largely preceded by ulcer. He adduces the analogy of leg ulcers seldom becoming malignant and says the analogy is applicable. The illustrations are adequate and the argument is given at length.

DR. A. B. KNAVEL: *Retropharyngeal and Posterior Mediastinal Abscesses.*—Cold abscesses secondary to tuberculous disease of the cervical and dorsal vertebræ may cause serious and widespread involvement because of their tendency to gravitate downward into the posterior mediastinum. According to their location they should be drained as early as recognized, in the neck or through a dorsal approach. Frequently they may be evacuated and closed, with complete remission of symptoms.

The pus should be evacuated by external and not pharyngeal approach in order to avoid serious mixed infection. The abscess may extend down into the posterior mediastinal space to the extent of two quarts. Fistula into the esophagus is frequent, due to erosion of the vertebræ. Preliminary gastrostomy is indicated in esophageal or tracheal perforation. The Trendelenburg position is recommended for feeding. When the abscess is below the fifth dorsal vertebra, dorsal incision is preferable.

A detailed report is made of an operation for abscess pressure in the posterior mediastinum and on the spinal cord. The x-ray showed the outline of a mediastinal abscess in front of the seventh dorsal vertebra, more on the right side. Incision was made from the fourth to the ninth dorsal spines, 4 cm. to the right of the midline. Pus was evacuated, with immediate and complete recovery from pressure symptoms.

In children there is frequently invasion of the vertebral canal, producing functional disturbances without actual mechanical destruction of the nerve elements. In 24 such cases, not operated upon, death or permanent paralysis resulted in every instance. Compression paralysis in Pott's disease is not infrequent in adults. Operation should be done more frequently. As a rule, death is anticipated from pulmonary tuberculosis. The *laissez-faire* attitude in large unhealing abscesses of Pott's disease must be corrected by a saner therapy of timely evacuation through the posterior medastinum.

The article includes 5 illustrations and a lengthy bibliography. D. A. WEBB.

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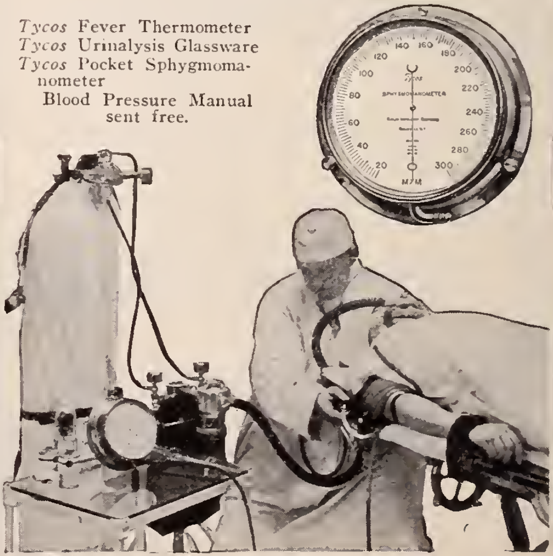

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ADDRESS

URINARY CALCULI AND SARCOMA OF THE KIDNEY IN CHILDREN*

HENRY T. PRICE, M.D.
PITTSBURGH

To bring some subject of importance to the attention of the members of the Pediatric Section of this Society seems to be the duty of the chairman; therefore, I will present some facts that have come to my notice during the past several years concerning the genito-urinary tract of children.

In spite of the vital importance of the genito-urinary tract to the life of the child sufficient attention is not paid to the pathology of this part of the human anatomy. Fortunately, normal physiological function usually develops at birth and anatomical defects so rarely occur that negligence in examination rarely causes harm to the little patient. Gradually the medical profession is learning those conditions that are pathological and those that are only deviations from the normal. The passage of urine is the index of normal function of the kidneys and the examination of a specimen gives definite information regarding the presence or absence of pathological contents.

The collection of a specimen of urine is very simple, regardless of the age of the child, but routine collection and examination of such a specimen is the exception much more frequently than the rule in children under two years. Many children of four years who come to our attention have never had a specimen of urine examined although they have been under medical observation many times. How many cases of high temperature which are unexplained by careful physical examination are classed as pyelitis by an examination of the urine? How many cases of malnutrition or delayed development are found by urine examination to be due to kidney affections? How many cases of diabetes in children are first discovered by examination of the urine?

I wish to call your attention to two affections of the urinary tract one of which is frequently overlooked, the other rarely being discovered early enough for successful treatment.

I. CALCULI

No doubt you all have seen the crystals found on diapers of newborn babies whose secretion of urine has been very scanty during the first twenty-four hours of extra-uterine life. Occasionally babies during the first year have severe crying spells, and following this "attack of colic" the nurse or mother has reported a deposit of sand on the diaper or in the vessel. Occasionally small "gravel" is passed by older children either accompanied by pain or without any symptom and the incident is forgotten. But, there are some children suffering from larger formations called calculi whose real condition is not discovered until serious damage has been done or the child has suffered unrelieved for several years.

Case 1: Louis Z., 6 years. West Penn Hospital. Admitted November 26, 1919. Diagnosis: Adherent prepuce.

Routine examination of the urine showed a heavy trace of albumin and too many pus cells to count. Examination revealed what seemed to be a stone in the bladder and the x-ray plate confirmed this diagnosis. In spite of everything that could be done the boy was removed from the hospital when operation was suggested.

Case 2: Mary U., 9 years. West Penn Hospital. Admitted July 21, 1919. Discharged August 23, 1919. Diagnosis: Suffering from incontinence of urine and feces.

She had pruritus ani and prolapse of the rectum, with bloody stools. Pin worms were present. She had abdominal pain. She had been attended in a dispensary for one year. She had paroxysms of pain in the abdomen every two or three weeks and these attacks had occurred for at least two years. Physical development was normal up to 5 years. Urine had contained albumin and about ten cells to a field, also many bacteria. This condition varied at different examinations. Temperature was irregular in type, often reaching 102°.

The child was removed from the hospital and three days later died at home. An autopsy was performed and a large stone was found in a much inflamed and thickened bladder.

Case 3: Robert W., 2½ years. West Penn Hospital. Surgeon: A. Stewart.

This little fellow was brought to the hospital because he was suffering from symptoms similar to those of a brother who had been operated upon a few years before for stone in the bladder and possible stones in the kidney: frequency of urination, and pain in lumbar region and over the bladder. He made four visits to the hospital for operations.

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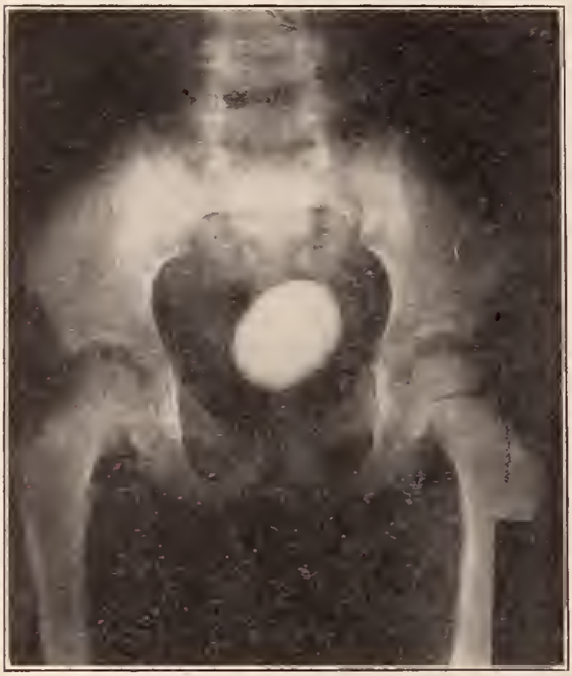
*The Chairman's Address, delivered before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

First visit: Admitted May 4, 1920. Discharged May 22, 1920. Stone removed from right kidney. It filled the entire distended pelvis of kidney. Recovery normal.



Case I. Louis Z.

Second visit: Admitted November 28, 1920. Discharged December 22, 1920. Stone size of pigeon egg removed from bladder. Recovery normal.

Third visit: Admitted October 30, 1921. Discharged November 20, 1921. Removal of large stone, filling pelvis of left kidney. There were two projections extending well up into kidney substance. The kidney was much enlarged and lobulated. Recovery normal.

Fourth visit: Admitted December 4, 1921. Discharged December 23, 1921. Child returned to have two stones removed from right kidney. Stones were removed and a nephrectomy was performed. X-ray plate. The composition of these stones was cystin.

Case 4: Robert W.'s brother. X-ray plate. Operation November, 1917. This boy was operated upon at four years of age for stone in the bladder and possible stone in one kidney. A double operation was performed and the little fellow died the same day. The stone removed in this boy was composed entirely of cystin.

Case 5: Dominic Di V., 4 years. West Penn Hospital. Admitted March 1, 1922. Discharged March 28, 1922. Surgeon: C. S. Foster. Diagnosis: Stone in bladder. No x-ray plate made.

He had difficulty in urination, pain in region of the bladder, occasional pain in the penis and rectum. First symptom occurred eighteen days before admission, with sudden cramp-like pain over bladder, painful urination, frequent desire to urinate and difficulty in starting the stream.

Stone 1 c.c. x 0.5 c.c. with jagged edges removed. Composition, laminated, containing calcium phosphate and a small quantity of calcium oxalate. Normal recovery.

Case 6: Andy L., 5 years. Childrens' Hospital. Admitted July 31, 1911. Operation August 5, 1911. Discharged August 22, 1911. Diagnosis: Stone in bladder. Surgeon: E. W. Meredith. Cured.

Present trouble had existed for one year. Had difficulty in passing urine and feces, sometimes cried with pain when voiding. Defecation and urination always at same time. Urine always contained albumin and pus cells.

Case 7: Wm. White, 5 years. Childrens' Hospital. Admitted October 30, 1916. Operation November 17, 1916. Discharged December 28, 1916. Diagnosis: Retention of urine and stone in bladder. Surgeon: E. W. Meredith. Cured.

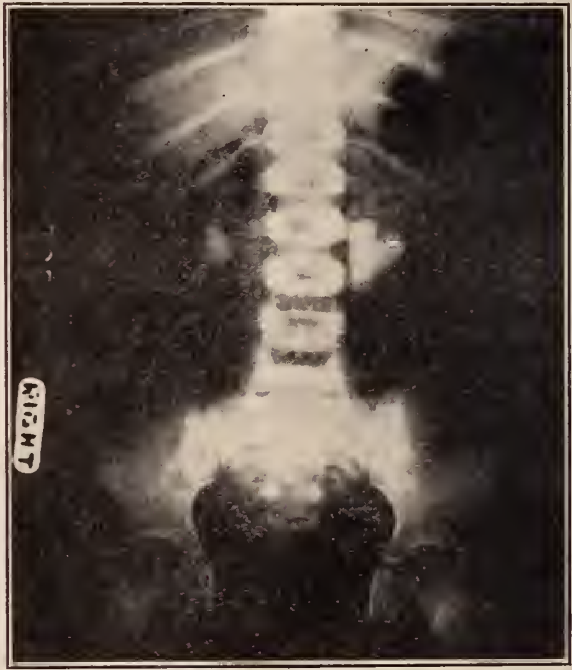
Unable to void for three days and catheterized at home. Urine contained large quantity of pus and was passed involuntarily. Uneventful recovery.

Case 8: Mike B., 5½ years. Childrens' Hospital. Admitted January 5, 1918. Operation January 23, 1918. Discharged February 21, 1918. Diagnosis: Stone in bladder. Surgeon: E. W. Meredith. Cured.

Two years ago child passed considerable blood in urine and had great difficulty in urinating. Urination accompanied by considerable pain at present. Urine on frequent exmination was alkaline, contained pus, blood and mucus. Made uneventful recovery.

Case 9: Annie K., 9 years. Childrens' Hospital. Admitted January 22, 1920. Died January 31, 1920. Diagnosis: Enuresis, cystitis, pyelitis, stone in bladder. Surgeon: C. H. Aufhammer.

Involuntary evacuation of bladder lasted for several years. Urine whitish and thick. Was able to void until present attack. Genitals irritated and vaginal discharge present. Smear negative for G. C. Rectal examination revealed large, hard, adherent mass toward left side of abdomen. Condition became suddenly worse January 31, 1921, and an emergency operation was performed under local anesthesia.

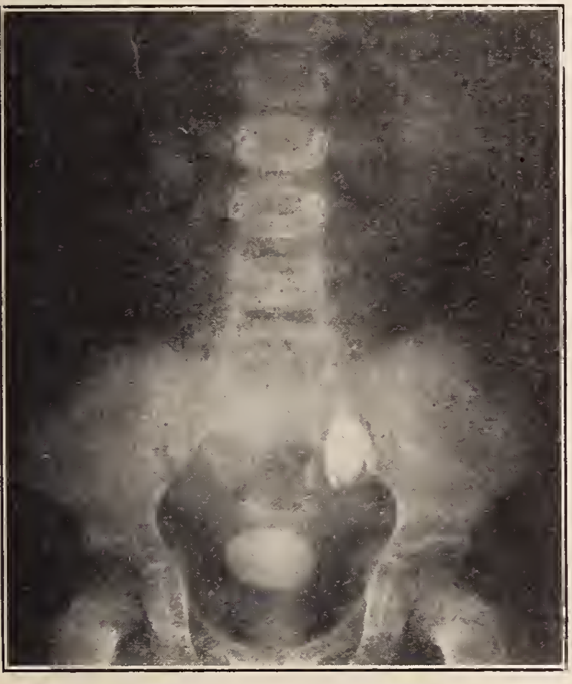


Case III. Robert W. Showing Return of Stone.

Large stone almost completely filled the bladder. Patient suddenly expired.

Urine was alkaline and contained thick mucus, albumin, pus and blood. There were some casts present.

Case 10: Annie E., 5½ years. Childrens' Hospital. Admitted June 4, 1921. Discharged July 1, 1922. Readmitted August 21, 1922. Diagnosis: Stone in bladder. Surgeon: C. H. Aufhammer.



Case IV. Brother of Robert W.

For past five months complained of frequency of urination. No pain at time of voiding, but had cramp-like pains in lower part of abdomen several times daily. Had irregular elevation of temperature. Very poorly nourished. Weight 21 lb., 5 oz. Gained rapidly after operation.

Gravel passed August 21, 1921. October 29, 1921, passed several small stones, and at various times since has passed small stones. Urine always contains albumin, pus, mucus and at frequent intervals blood.

Case 11: Charles P., 3½ years. West Penn Hospital. Admitted February, 1922. Diagnosis: Ununited fracture of femur. Surgeon: A. Stewart.

Had been in the hospital of a suburb of Pittsburgh, suffering from fracture of thigh during fall of 1921. In September his mother noticed blood was passed with urine at various times. He was then admitted to West Penn Hospital in February for operation on femur. During this residence in hospital he suffered for three weeks from a pyelocystitis. X-ray plate gave a doubtful shadow and, as the child improved, he was taken home.

In May he had a severe attack of pain in abdomen with more blood in urine and was taken to the hospital at Morgantown, West Virginia, where a large stone was removed from the bladder by Dr. Hardy.

Since that time he has passed six small stones and suffered intensely during the period of passage. September 9th, small stone was removed from bladder. September 26th, two small stones were removed from left kidney.

Bladder stones were composed chiefly of calcium phosphate and a small amount of calcium oxalate.

Case 12: Ruth M., 12 years. West Penn Hospital. Admitted October 16, 1919. Discharged November 5, 1919. Diagnosis: Stone in kidney. Surgeon: A. Stewart.

Sudden attack of pain in left side radiating to lumbar and genital regions. Two months ago had a similar attack which lasted ten days and was very severe for three or four days. Lost 27 pounds. X-ray showed renal calculus. Urine contained trace of albumin and 80-90 cells per field.

Stone was removed from the pelvis of the kidney and patient made a good recovery.

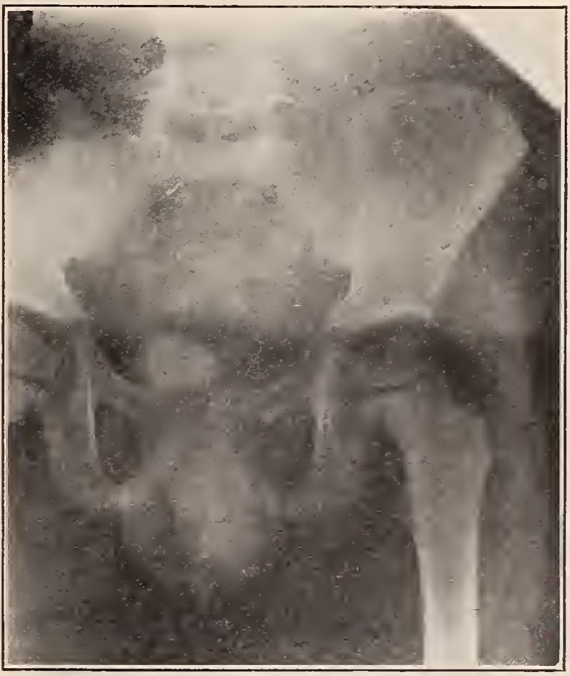
II. Sarcoma of the Kidney

According to literature the mortality from this disease is very high, almost uniformly fatal; but it seems, if diagnosed sufficiently early, that some of these little patients might be saved.

Five cases of sarcoma have come under my care; the youngest of these was six months old. This child was operated upon only a short time ago and so far has had no recurrence. Of the others, one died on the operation table from hemorrhage following attempted removal, two others were considered inoperable, while the other one had an opposite side involvement three months following a successful removal of the affected kidney.

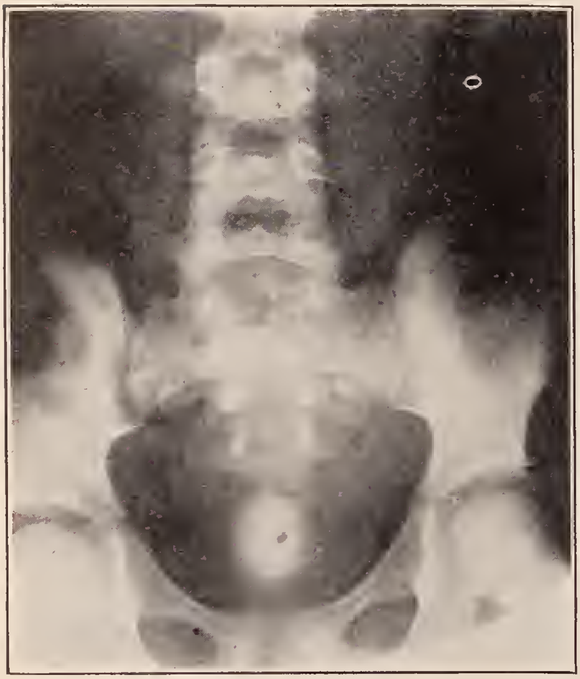
Case 1: Anna C. Age 28 months. Childrens' Hospital. Diagnosis: Sarcoma. Admitted April 4, 1917. Discharged May 21, 1917.

Child was admitted to the Childrens' Hospital because of a large mass in region of right kidney. A diagnosis of sarcoma was made and confirmed by the examination of a specimen removed at an exploratory operation. The child was sent home after a residence in the hospital of seventeen days.

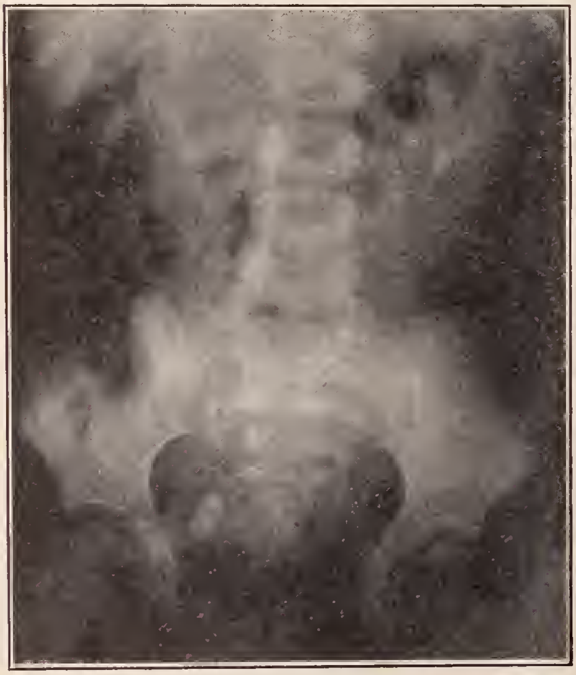


Case VIII. Mike B.

Case 2: Elvira C. Age 20 months Child was admitted to the Childrens' Hospital because her abdomen began to swell and feel hard. About a week before admission a large mass appeared in right side and the remainder of the abdomen became soft. The right kidney, the size of a grape fruit, was removed and proved to be sarcoma. The child made an uneventful recovery.



Case X. Annie E.



Case XI. Charles P.

Two months later she was examined, with negative findings; but in less than one month after this examination she was admitted to the hospital with a lump the size of an orange in the left side of the abdomen. This tumor had made its appearance within a week or ten days. The patient was sent home without operation.

Case 3: This history is not available, but the little girl of three years was operated upon, following a diagnosis of sarcoma of the kidney. The mass was so adherent that during separation of the adhesions the child almost died from hemorrhage. Later this patient died.

Case 4: Marshall N. Age 5 years. This child had injury to back while coasting in December, but made an uneventful recovery. In January he had an attack resembling appendicitis, but recovered without operation. Early in June he had another intestinal attack, which was followed by three others. Apparent recovery followed each attack.

During July he suddenly became ill while away on vacation, and the attending physician then noticed a lump in the abdomen. He was sent home and the tumor was supposed to be an enlarged liver. By the middle of August a definite separate nodular mass was discovered in the right abdomen and lumbar region and a diagnosis of sarcoma of the kidney made, when seen in consultation. Ten days later a section of the tumor was removed for examination and proved to be sarcoma of the congenital type.

Case 5: Baby H. (girl), 6 months. Was sent to my office for diagnosis of a lump in left abdomen. A tumor about three inches in diameter in region of left kidney was found and immediate removal was advised.

This mass, which proved to be a small round cell sarcoma of the kidney, was removed by Dr. C. C. Marshall of Sharon, Pennsylvania, and the child made an uneventful recovery.

Sufficient time has not elapsed for metastasis, but we hope this operation was performed early enough to prevent such a catastrophe.

Conclusions

The prevention or cure of pathological conditions of the genito-urinary tract has not proved as successful as is to be desired.

Calculi should be discovered early after their formation in order to prevent serious suffering or even death.

The fact that calculi may quickly form again should never be forgotten. In some cases this is the rule.

The early cure or removal of the source of infection of the urinary tract is sometimes impossible. The x-ray is the most valuable aid in the diagnosis of calculi.

Cystoscopic examination was made in a few of these cases but the diagnosis was made before this assistance was obtained.

Four cases of sarcoma occurred in girls without any definite etiological factor. The only case in a boy was probably of traumatic origin.

Dr. O. Pine queries: Is that ardent pursuit of the links indicative of your fondness for golf, or a vicarious method of attaining medical eminence in the eyes of your lay golf-fellows?

ORIGINAL ARTICLES

SYMPOSIUM ON HEADACHE

HEADACHE FROM THE OPHTHALMOLOGICAL STANDPOINT*

J. MILTON GRISCOM, M.D.

PHILADELPHIA

About fifty years ago, Drs. Wm. Thompson and S. Weir Mitchell called attention to the relation between certain types of headache and eyestrain. Since that time there has been a growing recognition among those practicing general medicine, as well as those engaged in special work, that the eyes are an important factor in the study of any case of chronic headache.

Unfortunately, there have appeared in the literature from time to time, articles setting forth the assertion that practically all headaches, as well as many general diseases, are traceable to some anomaly of refraction. To those who have carefully studied the subject of headache, however, the matter is not so simple or uncomplicated. Few headaches are so definite and clear cut in character as to permit a diagnosis of the source of trouble without conducting first a careful study of the patient from many angles. The experience of ophthalmologists justifies the statement that some headaches are entirely due to eyestrain. Whether or not this source produces 40-70% of all headaches, as claimed by various writers, may be left for others to discuss. The writer is not concerned with an attempt to prove that the ophthalmologist can relieve any definite percentage of headaches, but desires only to emphasize the part eyestrain and defective eyes may have in the production of this symptom.

The most characteristic head pain due to eyestrain is located in the supra-orbital and frontal region, coming on in the afternoon or early evening, following the use of the eyes for near work. The pain disappears after a night's rest, only to recur when the eyes are again used for several hours.

The location of the headache, however, may not be definitely frontal, but may be temporal or occipital. The two first positions are usually associated with hyperopic astigmatism or compound hyperopic astigmatism, while the last is usually due to unbalance of the extra-ocular muscles. When hyperphoria, exophoria or esophoria are present, even in small degrees, patients may develop an intense pain at the base of the skull, the so-called "panorama headaches," following a train or automobile ride, a visit to the theatre or moving pictures, or a day's shopping.

There are wide variations from the typical location and times of occurrence of headaches dependent on eyestrain. After a feeling of heaviness or dull eye pain, there may rapidly develop an intense general headache, with dizziness and nausea. In some instances the headaches of eyestrain do not pass away after sleep, but remain for a period of hours until the overworked ciliary muscle is completely rested or is assisted by the proper correcting glass. The variability in time, location and intensity of eye headaches make it impossible to be dogmatic or exact regarding them.

It is noteworthy that often the most persistent and intense headaches are associated with small errors of refraction and normal vision.

It may be well at this point to emphasize the fact that eyestrain in practically every case younger than forty, cannot be correctly removed unless the refractive error is measured under a reliable cycloplegic. Headaches which continue after glasses are worn, if the glasses have been prescribed without the use of drops, may still be due to uncorrected astigmatism.

Another type of headache which may demand the ophthalmologist's care is that associated with certain incipient forms of ocular disease. These are usually so evident that the source of the head pain can easily be explained. The one exception to this is incipient glaucoma, which may give rise to intense frontal and temporal headache of the neuralgic type, without any marked evidence of inflammation.

Just as the internist, neurologist or otolaryngologist should be aware of the eyes as a factor in the production of headaches, so the ophthalmologist, when consulted by a patient complaining of this symptom, must carefully analyze its character with due regard for all other possible causes. In the consideration of headache the ophthalmologist must remember that other factors may intensify the main symptom. It is true that those who have some degree of nerve instability, a focus of hidden infection, an intestinal toxemia, or pelvic disease, are more likely to have headaches from eyestrain than normally poised or healthy individuals. It is equally true that an uncorrected hyperopic astigmatism, even though small in degree, may be the exciting cause of many functional nervous disorders, associated with various types of headache. It is neither possible nor necessary to state the relative importance of eyestrain in such cases, since only after the use of proper correcting lenses can any estimate be made as to the part the eyes have played. The vital thing regarding such cases is to recognize that ocular defects have a possible place in the vicious circle of cause and effect, and to eliminate them promptly.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

HEADACHE FROM THE STANDPOINT OF THE OTOLOGIST*

G. W. MACKENZIE, M.D.

PHILADELPHIA

Headache is perhaps the most common complaint to which humanity is subject. It would be easier for one to recount the list of ailments in which headache is not found than a list of those in which it is. The loss of time incurred from headaches makes the problem an economic as well as a humanitarian one.

The symptom of headache may be so marked in certain instances as to obscure the less evident symptoms and prompt both the patient and the physician to mistake the headache for the disease itself, which in turn leads to the unscientific practice of prescribing sedatives in the form of headache powders rather than to an investigation and elimination of the cause of the headache. Of the more common forms of headaches practically all are correctible, if the cause is ascertained and removed.

The problem of discovering the cause of an obstinate headache in a given case where the family physician has failed, is one that belongs primarily to the neurologist. He needs, however, the aid of specialists in other fields, above all the ophthalmologist, next the otolaryngologist, and so on down the list, exempting none. With such a complete outfit at hand it is hardly conceivable how the cause of headache could escape detection in any case. The neurologist is expected to be the most versatile of all specialists, for it is up to him to know and be able to recall all the possible causes of headache.

The otologist's part in a symposium on headache is to draw attention to those pathologic conditions in the ear that bear a more or less direct etiologic relationship to headaches.

Concerning headaches of aural origin it may be said that middle ear suppuration, pure and simple, rarely produces headaches. When, however, the suppuration extends beyond the confines of the middle ear, one of the most common symptoms is headache.

Headache may occur in both acute and chronic mastoiditis. It is usually unilateral, but may be bilateral. It is due, no doubt, to the filterable bacterial toxins finding their way into the general circulation and also to these same toxins reaching the dura mater along the course of the perivascular lymphatics and producing there an extradural irritation.

Recently Culbert[1] pointed out the fact that periodic headaches occur in a certain proportion of chronic mastoid cases. He claims that the mastoid condition underlying these headaches may be a focal infection in the mastoid cells, chronic suppuration, necrosis of the bony wall of the middle ear cavity and mastoid cells, or sclerosis. Given such an underlying condition of the ear, the recurring headaches may be still further precipitated by any disturbance of the circulation by congestion from gastro-intestinal upsets, constipation, colds, fatigue, worry, and a thousand different things, a fact which further confuses the diagnosis when an examination of the ear has been overlooked.

Headaches from simple mastoiditis, the writer is inclined to believe, are not especially common. Given a case of mastoiditis, simple or chronic, with persistent headache, even though it be a mild one, he would be inclined to think of a complication present or impending.

The more common complications of middle ear suppuration and mastoiditis are abscess of the inner ear, extradural abscess, perisinous abscess, subdural abscess, brain abscess (superficial and deep), thrombophlebitis of the sigmoid, the superior or the inferior petrosal sinus, circumscribed purulent leptomeningitis, diffuse serous meningitis or meningismus and diffuse suppurative meningo-encephalitis. In none of these complications is headache, either circumscribed or diffuse, absent. A knowledge of this fact should prompt the physician to view any case of middle ear suppuration presenting the symptom of headache as suspicious, demanding an exhaustive otologic examination with the object of determining whether or not one of these complications is present.

Labyrinthine suppuration may be differentiated from serous labyrinthitis by reason of the fact that in the former condition headache is quite a constant symptom while it tends to be absent in the latter. This differential symptom was first pointed out by the writer in 1908 in Alexander's Clinic, and has since been confirmed by others.

The headache of extradural abscess is typically unilateral and most intense over the site of the lesion; besides, there is associated with the headache a well-defined small area of percussion tenderness.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

The headache in subdural abscess and superficial abscess of the brain is very much like that of extradural abscess, for the reason that we frequently find the extradural abscess associated. It is perhaps because of this fact that we find the headache and tenderness much the same in these several conditions. However, in the deeper conditions, particularly in superficial brain abscess, we find in addition a more diffuse character of headache—a unilateral, dull, heavy headache—which may obscure more or less the typical headache found in extradural abscess.

The headache of the deeper abscesses of the brain may be very slight during the latent stage, but it becomes quite severe during the manifest stage. It is usually dull in character and is not always referred to the site of the abscess. This is notably so in the case of cerebellar abscess, where the headache may be referred to the frontal region.

The headache of meningitis, serous or suppurative, is always severe and may be dull or lancinating and is characteristically aggravated by all sensory stimulations, light, sounds, passive movements of the body, etc. The headaches of serous meningitis may be quite as severe as that of the suppurative form.

The headache of thrombophlebitis is in proportion to the degree of involvement of the outer wall of the sinus; in other words, the intensity of the associated perisinusitis. In those cases where there is little or no involvement of the dura, the headache is only moderate.

Concerning headaches of aural origin, I should like to emphasize the following points: (1) That in uncomplicated middle ear suppuration, both acute and chronic, headache is not the rule, and in those cases in which it occurs it is never pronounced. (2) That in uncomplicated mastoid empyema with insufficient drainage, more or less headache is fairly common. (3) That in uncomplicated mastoid empyema with ample drainage, the headache is never severe because of the mastoid involvement alone. (4) That in every case of middle ear suppuration, with or without mastoid involvement, the occurrence of headache should prompt the physician to suspect immediately one or another of the several complications referred to above. (5) That headache is the most common symptom of every kind of intracranial complication of middle ear suppuration, and for this reason its presence should always be regarded with suspicion.

In closing this paper the writer wishes to avail himself of the opportunity to refer to headaches from a particular cause occasionally overlooked by the eye, ear, nose and throat specialist, to whom cases of protracted headaches are often referred for relief. Perhaps the most effectual manner of bringing the subject to your attention would be by the citation of a definite case. A patient was referred by Dr. Weston B. Bayley, of Philadelphia, for treatment of the nasal polypi and hyperplastic ethmoiditis. At the examination Dr. Bayley's diagnosis was confirmed, and the patient was operated upon accordingly. The patient had suffered for several months with a left-sided headache. The septum was deviated to that side and the ethmoiditis was limited to the same side. The right side was normal.

The nasal deflection was corrected and the left ethmoid labyrinth was exenterated. The headache disappeared promptly and it looked like a cure. A few weeks later the headache recurred and promised to persist. The patient's eyes were then examined and a unilateral left-sided anterior lenticonus with resulting high myopia was found. The details of the eye findings were presented in a paper read before this Society two years ago, the subject being "Lenticonus." Correcting lenses were prescribed and the headache improved for a few weeks, when it again recurred. The Wassermann made in the meantime was reported negative. Notwithstanding the report and the failure to cure the headache permanently after correcting the faulty nasal condition and the patient's refraction error, it was deemed advisable to administer antiluetic remedies. After one week of treatment with potassium iodid the headache improved materially. At the end of two weeks the headache disappeared entirely and has not recurred for more than two years. Whether the iodid of potassium alone, without attention to the eye and nose conditions would have accomplished the same results, it is impossible to say.

The writer has had similar, but somewhat less striking, experiences in middle ear cases, one of which was reported by his associate, Dr. W. G. Shemeley, before the Philadelphia Laryngological Society, two years ago.

In the study of headaches, the writer feels that the eye, ear, nose and throat specialist is more apt to overlook syphilis as an etiologic or contributing factor than the neurologist. Furthermore, if the Wassermann report comes back negative, he is too prone to accept the report as proof positive evidence of the absence of syphilis, when a therapeutic test would have set him right.

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HEADACHE FROM THE STANDPOINT OF THE RHINOLOGIST*

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In a paper entitled, "Trifacial Neuralgia from Nasal and Accessory Sinus Disease," delivered before this Section in 1914, I made the statement that disease of the nasal chambers and accessory sinuses was a frequent and unrecognized cause of facial neuralgia and obscure head pains. My opinion was based on the careful study and successful treatment of a series of cases of this character which extended over a period from 1904 to the time of reading the paper. In the discussion which followed I was surprised at the skepticism of some as to the part assumed by the nose in the production of facial and head pains. My reply was that patients did not usually consult the rhinologist for headaches and facial pains of obscure origin. Consequently the rhinologist did not have the chance to see as many cases as the family physician, the ophthalmologist and neurologist, who were generally consulted in succession.

In recent years, however, practitioners in various lines of medicine have come to recognize that intranasal and accessory sinus diseases are in many cases the cause of obscure headaches and neuralgias which have been classed as migraine, neuralgia, hemicrania, sick headache, etc. So that now the rhinologist must be familiar with the nasal conditions which may cause headache. According to Dintenfass, "ninety per cent of cases with headache not diagnosed and called nervous affections are of nasal origin." As a further illustration of the importance of this subject, Tilley states that in the entire mass of population he believes that 6.8 per cent suffer from some affection of the nasal accessory sinuses.

In order to have a clear understanding of the subject under discussion, a brief review of the trigeminus nerve will call to mind that it is the great sensory nerve of the nose and face. Its ophthalmic and superior maxillary divisions and the Vidian nerve are the nerves of common sensation of the nose and its appendages. The nasal or Meckel's ganglion is the center of sensory nerve distribution to the nose. It receives its sensory roots from the superior maxillary division of the trifacial or fifth nerve. Its sympathetic branch joins it to the superior cervical sympathetic. The nasal (Meckel's) ganglion is situated in the sphenomaxillary fossa, just behind and above the posterior tip of the middle turbinate and at a variable depth from the surface of the lateral nasal wall. It sends branches to the sphenoidal and ethmoidal air cells, the periosteum of the orbit, mucosa of all parts of the nose, the roof of the mouth, the soft palate, tonsils and nasopharynx. This very important ganglion is in close relation to the sphenoid sinus, the posterior ethmoid cells and the maxillary sinus. When these cavities contain pus, sometimes the ganglion is separated from them only by a thin wall of bone and a diseased membrane. The anterior part of the nasal cavity is supplied by the anterior ethmoidal branch of the ophthalmic division of the fifth nerve. The study of nasal headaches resolves itself into a consideration of the abnormal conditions of the nasal cavities and their adnexa which irritate the nerves distributed to them. The irritants may be mechanical, as from pressure, or chemical, such as toxin from pus.

One of the simplest of nasal conditions producing headache is pressure of the middle turbinate against the septum. The septum may be deflected or have a spur or ridge upon it, and if the contacting turbinate be congested it will cause a feeling of tightness in the nose, and supra-orbital headache. The turgescence of the turbinate may result from coryza, or from dust or pollen. In some cases the turgid turbinate comes from a discharging frontal sinus, in the event of which, in addition to removal of the end of the turbinate, the offending sinus must be cared for as well.

Slunder mentions a type of headache which he calls "vacuum frontal sinus headache." This is due to the closure of the frontal sinus without suppuration. He says the underlying cause is usually a hyperplasia of the structures in the region of the infundibulum and hiatus semilunaris. The pain is less severe than in acute frontal sinusitis. Sluder credits Ewing, of St. Louis, as being the first to recognize this type, the symptoms of which in brief are as follows: "Inability to use the eyes for near-work because of headache which is produced thereby and which is not relieved by glasses or eye treatment. It is accompanied by tenderness at the upper and inner part of the orbit at the attachment of the pulley of the superior oblique. The action of the muscle pulls on the sensitive floor at this point and causes pain. These cases have no pus in the nose, and no blindness or changes in the globe. The eye disturbance is in the nature of asthenopia. Treatment consists in establishing patency of the nasofrontal duct."

A characteristic of frontal sinus headache is that it comes on in the forenoon and passes away toward evening, with or without treatment. The pain in the early stage of acute frontal sinusitis is very severe, and is due to congestion of the mucosa from negative pressure. If pus be formed pain will result from the pressure and irritation of it. In some cases gas formed from the contained pus plays a part.

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Pain in antral inflammations is also due to the causes enumerated in frontal sinusitis. The pain here is often transferred to other branches of the trigeminus, which is sometimes misleading. The headache is frequently occipital. There is usually tenderness over the canine fossa. The x-ray, inspection of the nose for pus, and exploratory puncture may be used for verification.

Headache and pain from posterior ethmoidal and sphenoidal sinuses are usually referred to the occiput, deep temporal and parietal regions of the side affected. Headaches from anterior ethmoidal disease may be frontal or located between the eyes. Headache from sphenoidal sinus inflammation may be referred to the back of the head, side of the head, or anterior part of the head. The complexity of the pain is consequent upon the close proximity of the nasal ganglion and the first and second branches of the trigeminus to the sphenoidal sinus wall. The treatment of all sinus suppuration is the establishment of drainage and ventilation. This in most cases is operative. Personally I favor suction in the nose, by graduated vacuum pressure of from five to ten pounds, after opening the sinus cavities. This favors the escape of the contained secretions and induces a healthy congestion of the sinus mucosa.

Dr. Sluder describes a type called by him "nasal ganglion neurosis" which is accompanied by a symptom complex with its transferred pain. The vulnerability of the nasal ganglion can best be understood when we recall its anatomical relationship, and the distribution of its branches to the nasal mucosa. The following is a brief description in Dr. Sluder's words:

"A patient presenting all the features will tell of a coryza of greater or lesser severity, sometimes astonishingly slight and often forgotten, or it may have produced a postethmoidal sphenoidal empyema of greatest intensity. A short time later pain began at the root of the nose, and in and about the eye, the upper jaw and teeth, and extending backward to the temple and about the zygoma to the ear, making the ear ache, emphasized at the mastoid, but always severest back of that; thence reaching backward by way of the occiput and neck, it may extend to the shoulder blade and shoulder, and in severe attacks to the arm, forearm, hand and even to the finger tips. Accompanying this neuralgic symptom complex, there is also a sympathetic syndrome manifest in the nature of hyperesthetic rhinitis or hay fever. That this is a neurosis of the spheno-palatine ganglion is proved by applying a drop of saturated cocain solution to the nasal mucosa over the ganglion, and the symptoms are immediately relieved temporarily."

Dr. Sluder's treatment "consists in applying a two per cent silver nitrate solution over the ganglion. And in obstinate cases he injects half a cubic centimeter of five per cent phenol and ninety-five per cent alcohol into the nasal ganglion." Adjacent sinuses must be treated to relieve the ganglion from pressure and absorption of toxic substances.

The type of nasal disease known as hyperplastic sphenoiditis, is usually far-reaching, and may show a multiplicity of pain symptoms because of the intimate association of many nerve trunks in the region of the sphenoid. The nerves which sometimes come in contact with the sphenoid and which carry afferent fibres, are the first and second division of the fifth and the Vidian nerve. Consequently irritation of such an array of nerve tissue by extension of inflammation or the action of toxins, or from pressure of hyperplastic bone surrounding the nerves, may cause symptoms similar to those produced by all of the other sinuses. Hyperplastic sphenoiditis shows a localized inflammation and thickened mucosa, and sometimes polypi and cysts occur in the sinus. Treatment in this disease, as in all other diseases of the nose, must be directed to proper drainage and ventilation of the sinuses.

In conclusion, I wish to mention a case of a girl twelve years of age, who complained of constant and severe pain of the right frontal region for over a year. She was submitted to laboratory and clinical tests with negative results. The eye findings were normal. An x-ray of the frontal sinus was uncertain. Exploration showed an absence of this cavity. The mystery was cleared up when the supra-orbital nerve was found to be pinched between two pieces of bone which had attempted to complete the formation of the supra-orbital foramen. The inflamed piece of nerve was freed and excised, and the pain ceased immediately and has not returned up to the present time—a period of over three years.

HEADACHE FROM THE NEUROLOGICAL POINT OF VIEW*

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Headache differs from neuralgia in that in it there is not a clear cut boundary line between pain and normal sensation. It is not limited to the area of distribution of any given branch or branches of the fifth nerve. Patients place it in space as superficial or deep, widespread or limited, anterior or posterior, and on either side. Sometimes its location is of diagnostic value in determining the cause. Patients distinguish between headache and pain in the head. There is doubtless something significant in this, but what it is I do not know, save that when the ache is associated with painful points on nerve trunks neuritis is present. Patients distinguish different kinds of headache. I have seen glasses cure one ache and leave another, in the same patient, uninfluenced.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

The most important headaches having an organic basis within the cranium are those caused by meningitis and brain tumor. I will not take time to describe meningitic headache and its accompanying signs and symptoms; every physician learns them early in his career.

Headache is the most frequent of the general symptoms of brain tumor, occurring oftener than vertigo, vomiting, general convulsions or choked disc. Indeed it may be the only symptom throughout the course of illness and end in sudden death. Once it appears, it continues, with varying severity to be sure, but in the majority of cases never intermitting. There is nothing characteristic in its nature or severity. It may be dull or acute, boring, rending, tearing. It is increased by anything that causes passive cerebral congestion, e. g., coughing, violent vomiting, straining at stool, indeed any sudden muscular effort. Severity is of no localizing value, but pain is usually most when the tumor is below the tentorium. As to location, it may be diffuse, involving the whole cranium, or localized. Its position is of no value in localizing the tumor, except that a tender place in the scalp may mean that the tumor is immediately beneath. A real neuralgic pain, not a headache, means pressure on the fifth nerve and hence is of localizing value.

What causes headache in brain tumor? We assume it is usually due to increased intracranial pressure, causing a pull on the meninges, especially the dura, but this is not always true because a large tumor may cause no headache and a small one severe pain. In cases in which the tumor is immediately under the dura there may be pain from irritation of it.

Physicians not learned in psychiatry often ask as to the frequency of headache in the insane. Barring that which sometimes is complained of at the very onset of an acute attack of mental disease, paresis, and hypochondriasis, which is an insanity in a class by itself, headache is not a symptom. There are two reasons for this: In insanity, with the exception of arteriosclerotic cases, there is no disease of the brain which changes intracranial pressure; and even if the patient has some disease of the sinuses or elsewhere in his body, which would cause headache in the mentally normal person, the mental anesthesia present in the insane person prevents him from feeling it, just as the insane man may not feel hunger. A man, for example, whose whole consciousness is absorbed in thinking about a conspiracy to murder him is not going to pay attention to such a trifling thing as physical pain. A man in religious ecstasy will not suffer even though he be subjected to what would give us intense pain. In the demented there is not enough mind to appreciate pain. In cerebral arteriosclerosis before dementia, and in the early stages of paresis, headache is common.

The insane, however, though they rarely suffer from headache, often complain of queer uncanny sensations in the head, and the deluded often have hallucinations of voices within the head, devils dwelling there and the like. Probably in some cases the foundation of the hallucinations is a perversion of sensation in the meninges or in the sensory centers. It is not an uncommon thing for adolescents or even older people, who are at the beginning of one of those unclassifiable attacks of mental and emotional unbalance, to date all their symptoms from a moment in which something suddenly snapped within the head. What this means I do not know, but so many people have described the feeling to me in almost the same language, I am convinced that something does happen at that moment.

The insane, who are mentally alert enough to feel and not be distracted by some overwhelming delusion, sometimes speak of "fulness of the head," "a tight band around the head," "cracking within the head," "strange feelings," "congestion." But the people who describe these sensations are those who are suffering from what one might call an accidental insanity, an insanity in which the exciting cause (the exogenous) is the most important element and hereditary predisposition the least. Paranoiacs who are not ill, but congenitally structurally defective, do not complain thus, nor do people suffering from mania.

A neurologist must speak of migraine. Well, frankly, I do not feel happy when a sufferer comes to me for advice. I have internists, eye doctors, nose, throat and ear doctors, gynecologists, and doctors of all kinds examine the patient. Then I subject him to experimental therapeutics and sometimes give him advice which, if followed, averts or shortens the attack. Once in a while one of the specialists gives me a line of treatment for my patient which has a miraculous effect; sometimes I even succeed unaided. But when I try the same therapeutic measures the next time under apparently the same conditions, there is no effect. Nature sometimes effects a cure by brutal means. One man who had had attacks from puberty ceased to have them after fracturing his skull.

Migraine is philosophically interesting, though therapeutically pride-breaking, because it is a neurosis indicating family instability, almost always occurring in families in which other members have some nervous or mental disorder or are brilliantly able. It is a near relative to epilepsy. It is an aristocratic disease occurring especially among people of high mental rank. The sufferers may be uneducated but they are almost always people far above the average in intellectual ability and emotional sensitiveness. Migraine is not a headache, a symptom, but a disease in which head pain is one symptom.

It is a curious fact that if a sufferer from migraine becomes acutely insane his headaches frequently do not recur during the mental illness. Three instances of this are recorded in the Dictionary of Psychological Medicine. One young man passed through a maniacal attack, an elderly woman and man both passed through a melancholia with suicidal impulse, but immediately after recovery all three began again to have periodic headache. I have had similar experiences. A possible explanation is that the disturbed chemistry, causing the insanity, is antidotal to the physical pain, itself due to a poison. More probably the patient continues to have his migraine but pays no attention to it, does not feel it, because his whole field of consciousness is filled with his delusions or his maniacal flight of ideas.

There is a head sensation which is characteristic of neurasthenia. Men and women who are on the verge of an attack, after they have been sleeping poorly for some time, and occasionally even before insomnia appears, complain of a curious, queer, uncanny feeling in the occiput, in, as they say, the base of the brain. They do not describe it as pain but as a thing which frightens them. They often interpret it as a sign of approaching insanity. As they regain nervous balance it passes off. It is important to remember its occurrence in order not to confuse it with the much more frequent and serious persistent headache occurring in middle aged or older people and due to granular kidney with its associated heightened blood pressure. Patients having overactive thyroid glands complain of similar occipital sensations.

Another neurasthenic headache is that occurring at the period of adolescence or in young manhood. Neurasthenics get dull headaches located almost anywhere, but never agonizing pain; but if a youth complains of a dull frontal pain, simulating somewhat that seen in sinus disease, it is wise to study his sexual history, because you will sometimes find that his nasal mucous membrane is kept engorged so frequently and for so long periods at the same time that there is erection in another organ that in truth his sinus is blocked off and pain ensues.

As to hysteria there is little to say. It is a rare disease and one we really know little about. The nail in the head (clavis) is the most characteristic head symptom.

It should never be forgotten that syphilitic headache may occur soon after the infection, during the secondary stage. Also a negative Wassermann test signifies nothing and does not contraindicate the use of iodid and mercury.

Lastly, one word of warning: We are all too prone to dismiss sufferers from chronic headache, who present no sign of other disease, with the diagnosis of neurasthenia. Some of them may be neurasthenic, many are not, and the reason they continue to have headache is our ignorance, not their stubbornness nor a perverted desire which makes them enjoy pain.

DISCUSSION

OF SYMPOSIUM ON HEADACHE

Dr. G. Oram Ring (Philadelphia): The fact that one demoralizing symptom, "headache," should absorb the very serious attention of gentlemen representing so many and varied branches of medical thought, shows, after all, how closely allied we are, and how definitely we converge in our study to one focal point, the elaboration of which covers the broadest fields of medical research.

A short while ago a statement was published upon the editorial page of one of the most representative of our metropolitan journals, one section of which made the following rather caustic and, so far as I am aware, unchallenged charge: namely, that a headache means to the ophthalmologist eyestrain, to the rhinologist nasal sinus disease, to the otologist an aural abnormality, and to the specialist in gastro-enterology certain indigestion. Why the gynecologist and neurologist escaped I know not.

In his recent visit to our shores, in his evening of life, Professor Fuchs, master craftsman in ophthalmology and its most distinguished exponent in the Central Empires, was so profoundly impressed with the associated work of the American ophthalmologist, and the general type of study evidenced in this symposium, that he said in no country was so much and so thorough investigation made of the whole body for the possible cause of eye disease as in America. The dictum of such a scholar, after visiting nearly every important city of our country, if properly diffused, should effectually answer any such criticism as that to which I have referred.

It is quite true that the ophthalmologist sees remarkable results in the wiping out of headaches within the limits of his own specialization. The same is true of the otorhinologist, of the neurologist, of the gynecologist and of the skilled internist. Constitutional defects may be, and frequently are present in association with the basis of the special symptoms which we are studying. There are certain points upon which it is not our province to dogmatize too definitely, but to approach their study as scientific physicians, fully alive to the manifold causes of certain symptoms of disease, whether functional or organic. The pathology, however, is frequently most obscure, the diagnosis most perplexing, the remedies most uncertain. There is no symptom that more definitely taxes the experience and scientific knowledge of the physician, or requires closer observation in elucidating its nature and removing its obscurity.

The association of headache with ocular abnormalities, thought then to be due to a defect of the retina or optic nerve, was recognized by Jungken, Tyrrell, Lawrence and Mackenzie, between 1836 and 1843, and by Donders in 1864. Brudenall Carter, whom many of our ophthalmologists will remember in connection with their visits to old St. George's Hospital in London, elaborated the dependence of headache upon ocular refractive or muscle imbalance defects. A little later the work of G. T. Stevens, in America, will be remembered, embracing not only headache, but even maintaining the dependence of chorea, epilepsy and insanity, upon refractive and muscle abnormalities. It is true, however, as the essayist claims, that it was only our own teachers, Norris, Harlan, Thompson, Risley, scions of a day that seems even yet in its twilight, (aided, appreciated and inspired by him who gave to our city a brilliant repute from a neurologic as well as from a general literary standpoint, S. Weir Mitchell) who in publications of about the period of our Centennial Exhibition, gave to the medical world definite assurance that: first, many headaches are due to refractive and accommodative disorders of the eye; and second, the brain symptom is often the most prominent and sometimes the sole symptom of eye trouble, with no pain nor ocular fatigue, the strain with which the eye is used being interpreted solely by frontal or occipital headache, and in many cases the eye trouble becoming suddenly mischievous owing to some failure of general health or to increased sensitiveness of the brain from moral or mental causes. Indeed, all of us have seen instances where those in buoyant health will, for many years, overcome muscle difficulties in binocular accommodation, without sense of strain; when with failing powers, illness, mental or emotional strain, the eye defect is suddenly forced into prominence by a brain oversensitized—to use again an expression of Weir Mitchell's.

Headache as ordinarily seen by the ophthalmologist may be considered briefly from three viewpoints (Campbell): first, organic disease of the eye; second, retinal irritation; third, eyestrain.

If we consider the mental causes of headache as sensory, emotional and intellectual, impressions made upon the end organs of sight, hearing and smell will, of course, rank with the sensory causes, and may be explained upon the assumption (Campbell) that the centers of the special senses are very closely connected with the common sensibility centers of the head.

In an examination of an eye for the cause of a headache, the oculist will first of all eliminate any gross organic disorder of the ocular structures themselves. Proceeding from without in, he will later eliminate disease of the retina, choroid and optic nerve, as indicating gross intracranial disease, or as pointing to some cardiorenal or other systemic state which may be the direct or indirect cause of ophthalmic symptoms.

Brilliant lights and vivid colors, coming under the classification of retinal irritation, will often induce violent headaches which in the beginning are apt to be frontal, and which later diffuse themselves and become general. Many a fishing trip was formerly spoiled for the writer by a blinding frontal ache, or the delight of travel in tropic scenes checked for the nonce by the light reflected from water or chalky road, until the Crookes B lens became a constant part of an outing paraphernalia. The retina is apt to share in the irritability of a jaded or exhausted nervous system, and this will be an element in the too long delayed vacation.

The correction of eyestrain, while bulking large in the work of all ophthalmologists, will be especially to the fore with the younger men. Accommodative and muscular asthenopia are responsible for most of the headache seen by the oculist. So distinguished an authority as Harry Campbell maintained, in his classical treatise, that such headaches have no special characteristics by which they may be differentiated from those elsewhere induced. They may include almost any variety, and may be in every part of the head. If from the eyes they will be mostly frontal and temporal, generally bilateral, and of equal intensity. Other authorities maintain that vertex and occipital ache are more characteristic. Snell mentions them as frontal, across the forehead, just above the eyes, at times limited to the supra-orbital region, or as reaching the hair. He suggests that the frontal situation is the most common, the temporal less so but frequently present. It is further maintained that they may be at times between the eyes and the nose, may be paroxysmal and neuralgic or dull and continuous, that they are usually bilateral, and that the vertex and occiput are frequently involved. Elimination of the fusion sense and that of coördinate muscle adjustment probably explains the absence of headache in unilateral cases. As proof that the usual cause of asthenopic symptoms resulted from the effort to synchronize the two eyes in binocular single vision, Snell maintained that where two eyes were used the headache was present in a proportion of 70%, whereas where only one eye could be used it was present in only 19%.

The functional errors that induce our symptom headache will be in about 50% of the hypermetropic variety, compound hyperopia, astigmatism, simple hyperopic astigmatism and simple hyperopia. Slightly less than 25% of the cases will be suffering from mixed astigmatism and the remainder will be myopic, compound and simple astigmatism, or simple myopia.

The refractive error that most frequently induces headache (and I am, of course, speaking of the functional type) is compound hyperopic astigmatism, and its location will be in the vast majority of cases frontal and supra-orbital. The next most frequent location is occipital. In mixed astigmatism, supra-orbital headache isolated or combined with occipital distress is the more usual manifestation. In compound myopic astigmatism, headache of the isolated frontal type is present in over 60% of the cases. The combined supra-orbital and frontal type is rare, the occipital occurring in about one case in six. De Schweinitz stresses persistent headache as usually present in simple hyperopia, but does not mention any particular variety. Newcomb found no preponderating form of headache in this error. In simple hyperopic astigmatism the isolated frontal is usual, and this is less frequently combined with the supra-orbital and occipital. In simple myopia headache is rare, occurring in only one case in four, and if present is usually supra-orbital and frontal. In simple myopic astigmatism headache is more frequent than in simple myopia, but less so than in any other variety of astigmatism. To epitomize Colonel Newcomb's conclusions: The most usual form of headache induced by refraction error is frontal. Fronto-supra-orbital headache occupies an intermediate position. The occipito-temporal is next, and least of all in association with errors of refraction is the vertex ache.

The headache of muscle imbalance, sometimes expressing itself in lack of muscle tone, is a very large subject. Its causation may be congenital, and it may be influenced by many general conditions. It may be influenced by errors of refraction and disturbance of accommodation. The headache may be situated in any portion of the cranium, but it is not common in the occiput. The pain may immediately follow the use of the eyes or come on at a certain hour of the day or night, and may assume a migrainous type. The point to be emphasized is that the muscle abnormality must be measured and conclusions drawn after the correction of the refraction, and that measurements should be made for both near and far, that is to say at 30 cm. and at 6 m. The so-called panorama headache is a very real condition. In the same class belongs the so-called academy headache. They are sometimes improved by treatment directed to vertical or lateral defects in muscle balance. The author is an ardent exponent of the wiping out of vertical defects by prisms, and the local and general treatment of convergence insufficiency for near and distance.

As de Schweintiz suggests, "many remarkable instances of nervous disturbance are associated with heterophoria, but unfortunately the whole matter has not escaped exaggeration." There must be no attempt to treat an insufficiency simply as an insufficiency, but account must be taken of the complex causes which lie at the root of it (Duane). Duane's advice to use diverging prisms at the near point in cases of convergence-excess, is now being utilized.

Dr. Risley's dictum, that the relationship of abduction to adduction should be a minimum of one to three, I still find to be a very safe average working basis. We all perfectly know that the power of the interni frequently is, or easily can be trained much beyond this ratio; but I much prefer, for the patient's comfort, from the asthenopic viewpoint, that it be kept, if possible, up to that ratio. Then, in our further deductions, if the ratio of these two functions is sustained in a properly connected case, but each function is definitely below the ordinary limit (for example, if abduction should sink to three and adduction to eight or nine), it usually behooves us to look for some factor which is lessening the nervous supply to these muscles. If in such cases, after a diligent search by one or another of my medical friends, no sapping focus can be found, the importance of the outdoor life is emphasized, and if the patient still has soft arteries and is sufficiently advanced in years, I sometimes even permit myself to suggest the golf field.

Dunn once asked "Why does the use of the ciliary muscle produce headache any more than the use of the deltoid or the peronei?" If use or overuse of the ciliary muscle produces headache, why does it not always do so? What relation has use of the ciliary muscle to the production of headache? Why not jaw-ache, toothache or earache? The ciliary muscle is a structure outside the skull, headache a disturbance within the skull. Excessive irregular, perhaps spasmodic contractions of the ciliary muscle may originate impulses which reach the medulla and overflow into the vagus center (nausea and vomiting) and into the vestibular centers (vertigo). This, Dunn thinks, is the probable explanation of ocular vertigo and nausea. That it is true may be inferred from the ease with which nausea and vertigo can be aroused by disturbance of the fluid in one or more of the semicircular canals. But this does not explain the headache. Dunn then proceeds to elaborate the thesis that headaches, inclusive of those due to injuries and tumors, are a manifestation of increased intracranial tension. His discussion of a physiological increase of intracranial pressure, its cause, method of production and regulation, and the part played by the ciliary muscle in the production of a functional disarrangement of the hypophysis, with an induction of increase of pressure and headache secondary to eyestrain, is certainly suggestive. Eyestrain may result in a physiological high pressure on the retinal terminals, thus bringing about unstable intra-ocular tension, and then reflexly, intracranial pressure, which may readily result in headache. I mention this to bring to your attention Dunn's suggestive article.

Dr. Dercum finds the headache due to refractive or muscle imbalance mainly occipital, all of which means that we cannot dogmatize as to its location. With the use of a reliable cycloplegic, often well beyond 40 years of age, I am in entire accord, and occasionally use it beyond 50. It is entirely within the province of the oculist to determine definitely whether a mydriatic is safe. I also quite agree with the essayist as to the importance of low cylinders.

If I may be pardoned a moment for touching the neurologic side, I should like to quote from a personal communication of my friend, Dr. Dercum: "The organic headaches are those characterized by the symptoms of gross intracranial lesions, i. e., the pain is continuous, there are apt to be present an optic neuritis, other eye symptoms, perhaps vomiting and various localizing signs.

"The functional headaches are again subdivided into four groups: First, those embraced under the general caption of migraine. Migraine is a neurosis *sui generis,* like idiopathic epilepsy. It is as a rule readily distinguished by the fact that the attacks of pain recur at irregular intervals, are frequently one-sided, and are attended by more or less marked sympathetic disturbances. The attacks are also featured by the fact that the pain begins gradually and grows steadily worse until a maximum degree of intensity is reached, when it again subsides. In other words it is a neurosis irregularly paroxysmal in its character.

"In the second group of headaches are those due to disturbances of the various viscera. Among these are preëminently those which have their origin in affections of the eyes, especially eyestrain. Curiously, they are commonly featured by pain, occipital in character. Then there are the other headaches associated with diseases of the nose and accessory sinuses; of the throat, of the stomach and of the gastro-intestinal tract generally; and finally, the headaches associated with pelvic disease.

"Third, the headaches due to the toxemias are those met in a number of conditions, such as uremia, gout and other toxic states. They are usually featured by the fact that they are diffuse in character.

"Finally, we have the headaches associated with the great neuroses, such as neurasthenia and hysteria. The neurasthenic headaches are those brought on or made worse by mental exertion, are often diffuse, and sometimes occipital in character. The hysterical headaches on the other hand are very apt to be localized in painful areas which prove, upon examination, to be superficially sensitive to pressure."

At your meeting in 1907, attention was drawn by our late distinguished friend and colleague, Dr. Risley, to the importance of the subject we are discussing. Three of his conclusions may again well be emphasized: 1st, that the participation of the eyes as a cause of headache can only be positively excluded in a proved absence of ocular disease, or after painstaking correction of any existing error of refraction or abnormality of binocular balance; 2d, that in many cases prolonged eyestrain sets up an acute pathologic state in the fundus which requires time for recovery, and therefore immediate relief is not always to be expected; 3d, that the existence of some general affection does not exclude the eyes as the immediate cause of an associated headache. In the discussion which followed the reading of Dr. Risley's paper, Dr. Charles K. Mills said that ocular defects were rarely the sole cause of headaches, the neuropathic or neurotic constitution, or some toxemic state constituting, in his judgment, the more frequent underlying factor. Any pronouncement of Dr. Mill's must, perforce, receive our serious consideration; but I suspect that if we could bring together under the care of competent ophthalmologists the great army of patients who never need to go beyond the point of the accurate correction of a refractive or muscle imbalance error, such an opinion might be further modified. If an error in the eyes is present it is necessary that it be eliminated as a possible factor, even though it may not have been the dominant one. The neurologist does not see the great number of relieved cases where the oculist's work has been final.

From the naso-ocular viewpoint it should be remembered that differences in the power of accommodation in the two eyes, with accompanying headache, have frequently been relieved by the removal of a nasal pressure in a partial excision of a middle turbinal. Asthenopia has many times found a causal factor in nasal congestion spurs, ulceration hypertrophies or polypoid degeneration, and from contraction of nasal synechiae caused by too vigorous use of the cautery. Improvement in refraction from lessening of ciliary irritation and congestion by nasal treatment is definitely claimed by Parker. The ocular discomfort associated with unilateral headache connected with nasal congestion or deeper nasal involvement, I leave to the rhinologist. Here the expression of discomfort is ocular, the remedy nasal.

I have only briefly touched upon certain phases of a many-sided subject. With an important sidelight, a personal communication from a distinguished friend representing a branch of medicine which I presumed might not be represented, I beg to conclude a very cursory review. Dr. E. E. Montgomery has favored me with the following communication:

"Headache is so frequently associated with pelvic disorder that the careless observer may readily consider it to be a characteristic symptom. The judicious student, however, soon discovers that it is by no means pathognomonic. Headache may be produced by a variety of conditions, in which pelvic disorder may be a factor. I know of no form of headache which I would consider peculiar to disorder of the pelvic organs, unless it is the coronal. I have so frequently seen the latter associated with retrodisplacement, subinvolution and severe endocervicitis, that I have come to look for some such lesion when a patient makes complaint of it.

"A woman complaining of constant or frequent headache accompanied by disturbed function of the pelvic organs, should be subjected to examination: first, to determine the character and extent of the pelvic lesion; and second, to ascertain its relation to the predominating symptom in her case, the headache.

"A severe pelvic disorder may promote, aggravate or render continuous a headache which originally has been caused by some disturbed nervous communication, or reaction upon it from other organs. Such conditions justify local measures to lessen the strain, even though recognized as not the ultimate cause.

"In other cases, both the headache and the pelvic symptoms are mere expressions of general constitutional conditions, as for example, hypotension and hypertension, and are only properly treated by correction of the cause. It will be seen that the gynecologist must not arrive at a hasty conclusion, but base his action upon judgment formed after collection of all the evidence."

Dr. George F. Gracey (Harrisburg): After hearing the papers of the symposium I have been impressed by the fact that there seems to be a comparative infrequency of these true headaches in ear conditions, i. e., a small number of headaches that come from ear conditions as compared with those we find in eye and nasal conditions. The sequence of frequency seems to be first, eye; second, nasal; and third, ear.

When I say true headaches, I mean to emphasize the distinction between headache and pain in the head. There is always that distinction. Your patient will sometimes make it for you. If you make the distinction you will find that the large percentage of headaches in ear conditions are not headaches but actual pains in the head. Acute mastoiditis and acute sinusitis are not accompanied by headache; the pain of glaucoma or uveitis is not headache; but if we apply this distinction to ear conditions, how many times in ear conditions do you have real headache? You will agree with me that it is rare. When we have it, it is a serious complication. There are very few mastoid conditions which produce actual headache. I want to emphasize an exception to this, and that is the case in which we have had acute otitis media with a low toxemia from retained purulent secretions.

I want to agree thoroughly with Dr. Mackenzie that in chronic ear conditions the presence of true headache is a serious condition. When you get true headache in a chronic suppurative ear in which there has been a general suppuration you must think of necrosis of the bone, localized meningitis, epidural abscess or cerebral abscess. Practically all of those conditions in which true headaches exist are cases for investigation, and usually operative investigation.

Dr. J. Ferdinand Klinedinst (York): I think that since the 1918 influenza epidemic and the recurrent waves of influenza we have seen more individuals suffering with headaches from sinus trouble and associated disturbances of the eye. As Dr. Jobson has said, these headaches are divided into three forms: those from frontal sinuses, those which are nasal, and those with ethmoid involvement. It is most difficult, when patients come to the ophthalmologist and the rhinologist, to determine what is the cause of the headache, the eye or the sinuses. A number of authorities have pointed out the difference in symptoms. Usually in eyestrain, headache is bilateral; while headache in sinus infection is usually unilateral, unless there is associated sinusitis on both sides of the head. Therefore, in the symptoms from eyestrain, the headache increases as the day advances, depending upon the amount of use the eyes are given; while sinus headaches are usually worse when the patient is in the recumbent position or stoops forward.

As one cause of headache after the use of the eyes, Sluder has called attention to the fact that inflammation of the frontal sinuses causes irritation of the superior oblique muscles. Dr. Griscom quoted statistics showing that 40 to 75 per cent of headaches are due to eyestrain. I think that is too high an estimate. About 40% to 50% of those consulting the ophthalmologist complain of headache from eyestrain. We certainly are seeing to-day a great many people suffering from sinus disease which is causing headache. Then we have the combination of the two, inflammation of the eye and sinus trouble, which are relieved only by correction of the refraction errors and treatment of the sinuses.

Dr. Judson Daland (Philadelphia): I do not know of any diagnosis more difficult than to know exactly what causes certain headache. One point brought out by Dr. Burr and Dr. Gracey was that we should not include in the term "headache" what is really *head pain.* I think we should all bear in mind this distinction. I was a little surprised that one man, in the discussion, in speaking of frontal sinusitis intimated that it did not cause severe pain. I have seen patients with acute frontal sinusitis with obstruction suffer the most agonizing pain. I was much interested in all the papers on headache, and especially in the statement of Dr. Klinedinst that 45% is rather a high figure to assign to headaches of nasal origin. Whether he means 45% of all headaches or 45% of the cases in which nasal conditions are suspected as a cause of headache, I do not know, however.

There are few symptoms more frequently complained of than headache, and occasionally two or more varieties of headache may be present in the same patient, usually due to different causes. I desire to draw attention to but two of the many causes of headache. The most frequent cause of headache is intestinal toxemia, sometimes called "biliousness." A common cause of intermittent or constant localized or general headache is uremia.

I have often been puzzled to know the class of headache occurring in migraine. As Dr. Burr says, migraine, the pain of which is often intense, occurs in patients with unusual intellectual powers, emotional and descriptive, and should be under the care of a neurologist.

Concerning the difference between headache and pain in the head, headache may occur in a syphilitic from a number of causes, but severe continuous localized pain in the skull is often due to ostitis and periostitis.

Dr. Lawrence Litchfield (Pittsburgh): I should like to ask for some information. I think it is safer to make new terms than to use old terms in a new sense. If any one here can really explain to me the difference between a headache and a pain in the head, I will be glad to have him do so. The meaning of these two terms cannot, I think, be determined by this Section, but by English usage.

If a man has frontal sinusitis he has pain in the head; if the internal plate is eroded there is no change in sensation and yet it becomes a headache. In other words you have to make a postmortem to find out whether the patient had a headache or a pain in the head. I think it is a mistake to use such terms. When a man has a mastoiditis it gives him a pain in the head; when the infection goes through the internal plate or gets into the lateral sinus then he has headache.

I have been consulting internist to a Pittsburgh Eye and Ear Hospital for many years and have heard a number of such questions debated.

I am sorry I could not hear the whole symposium and think to round out the symposium properly we should hear from a psychiatrist and an internist. I understand it was stated that 45% of all headaches are due to conditions in and about the eye; I suppose that means 45% of the headaches coming within the scope of the men represented in this section. As the internist gets older he gets more and more disappointed by the small number of headaches he can cure by refraction and other attention of the ophthalmologist. I should put the percentage of headaches due to conditions in or about the eye at a very much lower figure.

Another kind of headache is that due to toxemia. The headache of constipation which is relieved immediately upon evacuation of the bowels, cannot be due to toxemia since the relief is too prompt. Such a headache must be due to mechanical causes.

Dr. Fred Fisher (Erie): Simply because we have found any trace of trouble in the eyes does not mean that correction of the eye trouble will remove the headache. Thousands of cases are coming to the ophthalmologist because the industrial corporations find their eyesight defective. Many of these men never suffered from headache, but they may develop it from many causes other than the eye. For this reason it is not advisable to tell a man he has a refractive error, and when this is corrected his headaches will disappear. Do not promise him too much in the way of relief of headaches when you prescribe a lense that restores his vision to normal.

One thing that has not been spoken of as applying to these cases is the high candle power lights used in many offices and factories. Where men work constantly under actinic rays which develop headache, simple refraction will not do the trick. We need something that will bar out these rays as well. In these cases the lenses devised by Sir William Crookes are very useful. The "A" shade of Crookes lenses shuts out only two per cent of light and will be found most useful in office workers, etc. The "B" shade, which is a trifle darker, finds its use in furnace workers, automobilists and on the seashore. These lenses will give relief in many cases of eyestrain, where a careful refraction under a mydriatic fails to clear up the headache.

Dr. John F. Culp (Harrisburg): This Section and the Section officers are to be congratulated on the high type of papers read in this symposium. It has been my pleasure to have listened to a number of symposiums on this subject in national and international meetings, but I do not recall ever having been so much instructed on this subject as I have been this afternoon.

In speaking of headaches, Dr. Burr spoke of the headaches due to neurasthenia and says that he does not know exactly what they mean. If you will permit a personal allusion I think I can explain it in a concrete manner. Quite a number of years ago, after returning from a prolonged study abroad, I was troubled with severe headaches which were supposed to be due to eyestrain. There was slight astigmatism with slight imbalance of the extra-ocular muscles.

Notwithstanding a perfect correction was made by glasses by several well-known oculists the headaches still persisted. Being of a nervous temperament, every physician whom I consulted about it, said these headaches were due to neurasthenia.

Finally one ophthalmologist of note insisted on my exercising the eye muscles with prisms and after a few weeks of such treatment the headaches disappeared; so you see in this instance the neurasthenia had sufficient pathology behind it to justify its existence.

Dr. Lewis Taylor (Wilkes-Barre): This symposium this afternoon should emphasize the dangers of specialties. I think many of us would say we have seen numerous cases of headache relieved by refraction. Also, we have seen many not relieved in that way. If the ophthalmologist ever prayed, his prayer would be, "Oh Lord, help me to remember that I am dealing with a human being of whom it was long ago said, I am fearfully and wonderfully made."

There is always the danger of depending too much on one thing. I believe there is danger in depending too much on the Wassermann test as has been pointed out. I remember one case in which I had not the slightest doubt that the patient had syphilis. The Wassermann was negative but the patient got well on salvarsan treatment, which goes to show that a negative Wassermann does not mean that the patient does not have syphilis.

Of course, there is always nose and throat trouble, and particularly nose trouble, as a possible cause. Behind the disease itself there is the general condition of the patient, constipation, etc., all of which have an influence. As Dr. Parry, of Bath, said more than a hundred years ago, it is far more important to consider the patient we are treating than the kind of disease the patient has. We should bear in mind that there are so many other conditions beside the eye, ear, nose and throat lesions which can cause headache.

Dr. Mackenzie (in closing): I feel quite sure that the essayists generally have enjoyed the discussions of their papers. I won't attempt to answer the question raised as to the difference between a headache and a pain in the head. Patients usually do that for us. However, when a patient speaks of an acute pain localized, we generally accept it as a pain in the head; but when it is less acute, more diffuse, we accept it as a headache.

Concerning trifacial neuralgia, I should like to refer to a case that I saw last December. I happened to be on a gunning trip down Delaware Bay, when I was called home in a hurry to see a patient with a supposed brain abscess. The patient had been suffering for three weeks with a severe trifacial neuralgia of the right side, when he began to develop a fever with irregular fluctuations. The physician in charge observed that the patient also had a chronic middle ear discharge and thought the case was one of intracranial complications, but was somewhat uncertain as to the nature of the complication. My associate, Dr. William G. Shemeley, went to see the patient at the hospital and made a neuro-otological examination, as far as it was possible to make in a patient who was profoundly sick. The examination was negative excepting for the three or four outstanding features, namely: severe trifacial neuralgia, irregular temperature with wide fluctuations, and a chronically discharging middle ear. The odor of the discharge suggested caries. At first I thought of a sigmoid sinus thrombosis, but I could not explain the trifacial neuralgia, when suddenly it occurred to me that the thrombosis probably began in the superior petrosal sinus which lies, in its anterior extremity, very close to the gasserian ganglion. An operation was decided upon.

The mastoid was opened, and the softened bone was found to lead directly to the petrosal sinus. This operative finding confirmed my opinion of a superior petrosal sinus thrombosis. At the same time I exposed the sigmoid sinus and found a well-developed thrombus. I hoped that with the removal of the thrombus in the sigmoid sinus, the thrombus in the petrosal sinus would come with it. In this I was disappointed. I then attempted to remove the clot in the petrosal sinus with a very narrow curette. I succeeded in bringing some shreds and a few clots, when I stopped and packed the wound after the usual manner.

Following the operation the temperature came down to normal and the patient showed marked improvement, which continued for four or five days. However, I felt apprehensive, fearing that I had not succeeded in removing the thrombus sufficiently from the petrosal sinus. Notwithstanding the marked improvement, I felt fearful that the phlebitis in the anterior extremity of the petrosal sinus might spread to the cavernous sinus. At the end of a week my fears were realized and the patient manifested fully developed symptoms of a cavernous sinus thrombosis. The patient died a few days later.

Within a short time, less than a month, I was called to see a second case of the kind and was able to recognize it by the combination of symptoms noted in the first case. In the second case the thrombus began as in the first case with a thrombophlebitis in the superior petrosal sinus, but in this second case the sinus infection did not reach the sigmoid. At the present time I feel that I should be able to recognize promptly another case of the kind and would be prepared to operate upon it more radically than I did upon the first case.

Concerning trifacial neuralgia, we should not forget that, due to contraction of the soft membranes in late cases of lues, causes of trifacial neuralgia exist in which the extirpation of the gasserian ganglion will not effect a cure because the pressure upon the root of the fifth nerve is centerward of the ganglion proper.

Dr. Jobson (in closing): Dr. Cohen, of Philadelphia, has handed me a note asking if I have been successful in treating trouble of the nasal ganglion by the Sluder method. In answer I will say that I have been quite successful by the Sluder method. I think that the failure in cases is due to a wrong diagnosis. In every case place a pledget of cotton saturated with cocain solution against the outer wall of the affected side, posterior to and above the posterior end of the middle turbinate, and if the pain ceases you may be fairly sure that the trouble is in the nasal ganglion. If not successful, then inject the cocain solution into the sphenoidal sinus, and if the pain stops you will know that the trouble is located here.

It has been stated that I did not emphasize the severe pain which accompanies acute frontal sinusitis. My reason for not doing so was that I thought all present were sufficiently familiar with this distinguishing symptom to make it unnecessary to dwell longer on it. The most excruciating pain, as we know, results in most cases from acute frontal sinusitis. I have noticed cases accompanied by severe frontal pain, in which shrinkage of the nasofrontal duct and use of suction will cause a disagreeable catarrhal odor, which is due to a discharge of gas without pus from the frontal sinus. In such cases the pain is usually relieved upon escape of the gas.

PROGNOSIS IN MYOCARDIAL DISEASE*

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Some twelve years ago I noticed that there was an increasing number of patients in middle life, i. e., over 40 years of age, who were suffering from cardiac insufficiency associated with arteriosclerosis, or coronary artery disease, or hypertension, or merely hypertrophy of the heart. They were patients without valvular disease, or in which the valvular disease played an unimportant rôle. Many of these patients were engaged in occupations which made it important for them to know what their outlook as to activity and life was. In this way I became much interested in the question of prognosis in general and more particularly in the prognosis of this group of cardiac cases, especially of those who had attacks of precordial pain, so-called angina pectoris.

Parenthetically I should like to dwell on the importance of a more conscious and systematic study of prognosis. Just as the last generation of internists devoted their attention to etiology and above all to accurate diagnosis, so, it seems to me, the present generation should use these as stepping stones to determine the grade of severity of disease, the treatment and its future course. That means that the laws of pathological and physiological processes should be made subjects for intensive research, so that the future may not always remain impenetrable to us. I agree with H. G. Wells who, in speaking of things in general, said he believed in a deliberate direction of study toward the future, and that it would be enormously stimulating and profitable.

It was while trying to find some new clues to making a prognosis in these cardiac cases without valvular disease, especially those with precordial pain, that we turned to the new field of electrocardiography to see whether there were any electrocardiographic changes associated with myocardial disease. I joined with Dr. Rothschild, who was approaching the subject from a different angle, and we made some interesting observations.

It was fortunate for our purpose that the electrocardiograph does record disturbances of conduction, and so we were able to detect certain disorders of conduction in the heart muscle if they happened to involve the specialized conducting system. We know that the specialized conducting system between auricles and ventricles begins at the auriculoventricular node (node of Tawara), continues as a short stem (the a-v. bundle or the bundle of His) to the septum and divides into two chief branches, the right and left main branches, which conduct impulses to the right and left ventricles respectively. Each branch subsequently divides and subdivides into smaller branches and finally into arborizations which line the whole interior of both ventricles. The rate of conduction along this special system is about ten times as fast as along ordinary ventricular musculature, so that we have a mechanism by which the impulse is conducted rapidly and simultaneously to all parts of both ventricles and causes them to contract and drive the blood through the pulmonary artery to the lungs and through the aorta to the systemic circulation. The passage of such an impulse along normal channels at a normal rate results in a normal electrocardiogram. Any delay, interruption or change of the course of the impulse may result in a change in the electrocardiogram. We have had many clinical examples of such abnormal electrocardiograms, and have been able in a certain number of them to follow the cases and ultimately to study the hearts in serial sections and locate the lesions.

Anything like a lesion or poisoning or disturbance of the nutrition of the a-v. bundle may cause a condition of auriculoventricular heart block, either partial or complete. Damage of one or the other of the two main branches of the bundle of His may result in a bundle branch block with characteristic electrocardiograms of which I can show you two excellent examples. The huge diphasic ventricular complexes are typical.

Then there is a considerable number of instances in which the electrocardiograms, although variable, have in a general way the following characteristics in common: (1) Widening of the R wave, so that its foot-points are abnormally separated. The prolongation of the time interval of the Q R S complex may certainly be considered as beyond the normal limits, if it is over 0.1 second. (2) Notching of the R wave. (3) Low voltage as expressed by a low amplitude of the R wave in all three deviations. (4) Absence of the typical diphasic curves with huge T' waves, characteristic of bundle branch block. Such electrocardiograms are associated with a partial lesion of one or the other of the two main branches, or a more extensive lesion of the sub-branches or arborizations of the Purkinje network. We have found such electrocardiograms in cases in which pathological sections revealed, for example, a large adherent thrombosis; in another instance acute diffuse myocarditis; also in instances of coronary artery closure with myocarditic cicatrices resulting from infarcts. The usual sequence of events is coronary artery embolus or thrombus, an infarct in the heart wall, an area of myomalacia with connective tissue scar.

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The prognoses in patients whose electrocardiogram showed such changes permanently have been poor. In our figures of the year 1917, 45% were dead within two years of the time of examination. In Willius's statistics, 69.6% were dead within eight months of the date of examination, and all but three of his cases died of heart disease.

It is important to remember that many of these cases are ambulatory and doing their usual duties. They are not instances of advanced heart failure or end-stage cases, in which a poor prognosis can be made without the use of any instrumental method.

As to the instrumental method, more particularly the electrocardiograph, one may object that it is a complicated, stationary, expensive piece of apparatus, but I may say in reply we are already using a movable galvanometer with perfectly satisfactory results and I predict that in the very near future there will be available a truly portable apparatus.

124 E. 61st Street.

DISCUSSION

Dr. E. J. G. Beardsley (Philadelphia): Dr. Oppenheimer's charmingly presented demonstration has most agreeably and entirely painlessly afforded us excellent instruction in the modern conception regarding the morbid anatomy and pathology found in this common form of cardiac disease.

It is important and necessary, however, that we remember to visualize and to correlate the demonstration that we have enjoyed to-day with our daily experiences with patients who suffer from dyspnea due to cardiac decompensation. How much more nearly a science the art of medicine would become if a large number of physicians would do as Dr. Oppenheimer has done, i. e., make every reasonable effort to secure a careful macroscopic and microscopic examination of the hearts of patients when death has come to them!

There is a very human and very natural tendency among physicians to avoid the disagreeable and unpleasant details that are necessary in order to obtain an autopsy. We physicians are all inclined to feel that, having disappointingly failed in our efforts to preserve a life or to restore a patient to health, it is asking a good deal to intrude upon the grief-stricken family of the patient to request an autopsy. It is hardly necessary, however, to point out that this is not the proper attitude of mind to hold if clinical medicine is to improve its methods of procedure in our generation. We make and we continue to make too many mistakes in our professional lives that would be easily avoidable if we would but take the necessary measures to confirm or refute our diagnoses. It is quite true that the lay public needs education as to the wisdom and necessity for granting permission for properly performed autopsies but it is equally true that the medical profession need, scarcely less, a realization of the supreme importance of properly conducted postmortem examinations for the purpose of stimulating an ardent desire to know the exact truth about disease.

Dr. Howard G. Schleiter (Pittsburgh): I am very glad that Dr. Oppenheimer has reiterated so well and clearly the importance of the electrocardiograph with reference to cardiac diseases and their prognosis. The criticism has often been brought against graphic methods that they are a substitute for accurate clinical observation, and tempt us to be less keen in physical diagnosis. Obviously this is untrue. Graphic methods are simply an aid to diagnosis like the sphygmomanometer and the clinical thermometer. Sometimes they throw no light on the situation, sometimes they merely confirm our clinical findings, but at other times and quite frequently they supply valuable data which no other method can reveal. It is for this reason that no careful cardiovascular study can be complete without them.

At first, interest in the electrocardiograph was largely centered in the identification of the arrhythmias. But in recent years it has seemed that it may be able to yield some information in that very difficult field—the estimation of damage to heart muscle. In the light of our present knowledge the persistent presence of one or more of the phenomena mentioned by Dr. Oppenheimer, viz., low voltage, widening and notching of the R wave and inversion of the T wave, should at the least arouse our suspicions regarding the future of the patient. (It is to be remembered that in any case where T inversion is found, inquiry should be made whether this may not be due to digitalis.) On the other hand, we cannot overlook the fact that some patients dying of myocardial failure and showing at autopsy advanced degeneration of the heart, have presented normal electrocardiograms. So there is room for further investigation along this line.

I should like to mention a case which presented convincing evidence of the significance of low voltage. This was an ex-soldier with a very large tuberculous pericardial effusion. As much as a litre at a time could be removed from this patient's pericardial cavity. It was found on several occasions that some days following a paracentesis when the patient was feeling subjectively improved, the voltage would rise, to diminish again as the fluid reaccumulated. The rise in voltage did not come simultaneously with the relief of pressure from the fluid, but seemed to run parallel to the improvement in the patient's subjective sensations after the heart had had an opportunity to recover from the pressure.

On account of the information of established value that can be revealed by the electrocardiograph (and in no other way), and also on account of its further possibilities in research, it is evident that every hospital should be equipped with this means of examination.

Dr. S. Calvin Smith (Philadelphia): If. Dr. Oppenheimer will pardon the direct personal reference, I wish to express my profound admiration for the initiative and scientific spirit which prompted his thorough and laborious studies. Electrocardiography is in its infancy, and its evolution into a definite clinical aid depends upon such researches and proof as have been laid before us this afternoon. It is not enough for the few of us who are engaged in electrocardiography to observe that certain abnormalities in heart records are associated with certain types of heart fault, and from these observations to construct a hypothesis; the hypothesis must be refuted or confirmed at necropsy. The confirmations which we have seen in lantern slides of microscopic findings establish the clinical value of Dr.

Oppenheimer's premises. We have had it proved this afternoon by postmortem research that certain types of abnormal heart records are indicative of grave heart muscle fault in the ambulatory patient who needs not necessarily present such physical signs as murmurs, thrills, marked cardiac enlargement, edema, congestions, etc., and who may also be quite free from the symptoms of breathlessness, chest pains, marked limitations on accustomed effort and other classical symptoms of heart failure. Certainly this is a contribution to clinical medicine, and it behooves us to familiarize ourselves with the records which Dr. Oppenheimer considers typical when this instructive paper is published in the Journal.

Dr. J. William Wood (Chester): I hardly feel capable of discussing Dr. Oppenheimer's paper with my comparatively meager knowledge. I am impressed that studies like these bring home to us the fact that heart disease must be expressed in terms of myocardial insufficiency or sufficiency. We must abandon the old classification based on valvular disease and talk about the myocardium.

I think that autopsy comparisons in connection with papers of this kind are of extreme value. There should be more of them.

Dr. Oppenheimer (in closing): In speaking I omitted to emphasize the statistics on the prognosis in cases showing this arborization block. When Dr. Rothschild and I traced our cases in 1917, we found 45% of patients showing such electrocardiograms permanently were dead within two years of the time of taking the record. Subsequently, Willius, of the Mayo Clinic, reported on 112 similar cases in which further information was obtained, and he found that 78 (i. e., 69.6%) were dead. All but three of these died of heart disease. Their average duration of life from the date of making the diagnosis was 8½ months. Dr. J. D. Heard, of Pittsburgh, also reported a series of such cases. We have had numerous instances since, and hope to trace their subsequent histories in the near future, but follow-up work in New York City is difficult, as change of residence is very, very frequent in my city.

I must agree absolutely with Dr. Schleiter that a patient may have a normal electrocardiogram and still within a short time have a fatal attack of angina pectoris. Dr. Rothschild and I have both had several such instances. But on the whole we have found that patients with the symptom "angina pectoris" who present a normal electrocardiogram have a far better prognosis than those which show disturbances of conduction within the ventricles.

It is a pleasure to know that Dr. Schleiter has noted low voltage in instances of pericardial effusion. Theoretically one might expect this, and practically we have seen it a very few times; but as we are just now working on the subject, we are not prepared to make any statement.

VASCULAR HYPERTENSION; ETIOLOGICAL FACTORS*

JOSEPH BARACH, M.D.
PITTSBURGH

Vascular hypertension occurs in one set of individuals in whom we find demonstrable pathologic conditions, and it occurs in another set of individuals in whom all our diagnostic methods fail to reveal which organ is at fault. This latter type of case has been designated as essential vascular hypertension.

A large amount of investigative work has been carried out in the attempt to uncover the etiology of vascular hypertension and up to the present time there is yet no general agreement. First of all, heredity is considered a potent factor. After this, whereas in the past it was considered by some that hypertension is the result of arteriosclerosis, the very opposite view is now pretty generally accepted, and that is that hypertension is a cause rather than effect of arteriosclerosis. Many other causes are given. They are remote infections, endocrine disturbances, menopause, ovarian activity, thyroid activity, arteriosclerosis, nephritis, nervous disturbance, overeating, poisons, etc.

I wish to present for your consideration today, a viewpoint of the development of this disease state which we call essential vascular hypertension. In this presentation I have gathered evidence suggesting that essential vascular hypertension is not a spontaneous disease, that in fact it has its inception very early in life and runs its course throughout the life of the individual.

The following observations suggest that this disease state is the result of hereditary influence, the chronic and acute infections, and certain still incompletely defined endocrine disturbances. There doubtless are other factors involved in the production of hypertension, but in the cases grouped here they are to be considered of lesser importance.

Heredity: A careful study of the individual and family history in forty cases showed that in all but two instances there was a distinct cardiovascular inferiority. These observations were made upon parent and offspring brothers and sisters.

The Acute Infections: In going over a series of 68 cases of vascular hypertension, I found a history of typhoid fever in 28, recurring severe tonsillitis in 16, scarlet fever in 9, diphtheria in 8, rheumatic fever in 5, malaria in 5, and lues in 3. Absolute recovery from these infections probably does not occur. Sometimes the after effects are not manifest for years.

The Chronic Infections: Long continued infections surmounted by acute exacerbations are also responsible for remote sequelæ. In discussing the effects of chronic infection, there are evidences showing a continuity of the disease process which begins early in the life of the individual and continues throughout life, altering that individual both physically and mentally. On

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

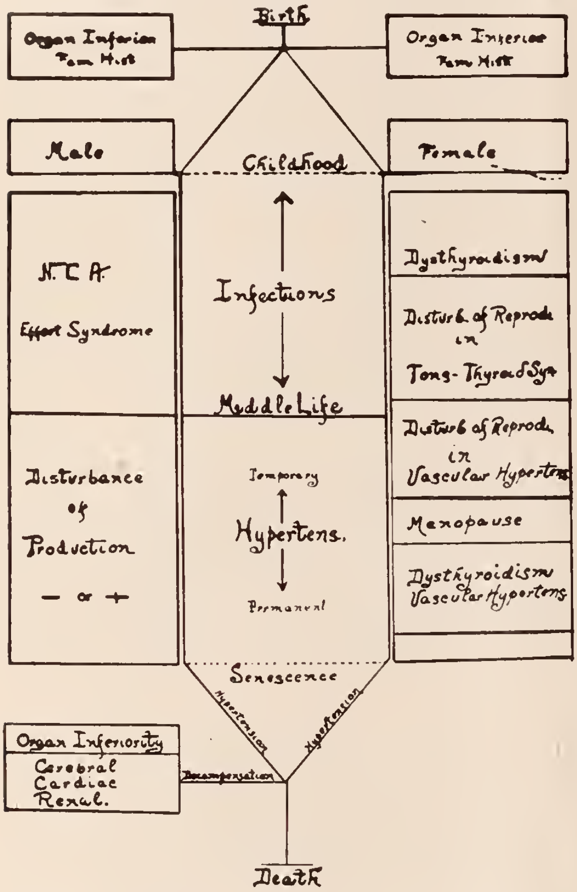

Chart No. I. Essential Vascular Hypertension, from Birth to Death.

account of involvement of the endocrines the clinical picture manifests itself differently in the sexes. It should therefore be discussed under the headings of male and female. The common infection of early life, that of the upper respiratory tract, is mainly in the adenoids and tonsils. Remote effects of diseased tonsils are, I believe, not yet fully appreciated. A considerable number of observations have convinced me fully that the child who has passed the age of puberty, harboring a throat infection or infection along the upper respiratory tract, will have suffered certain constitutional changes. Chronic tonsillar infection in a girl reaching the age of puberty to adolescence will in a considerable number of cases be associated with a marked dysthyroidism. In the boy chronic tonsillar infection up to the same age will be associated with the syndrome known as neurocirculatory asthenia. Here we have an interesting problem—the same disease process, chronic tonsillar infection, associated with entirely different clinical pictures in the sexes. This noteworthy occurrence accounts for the fact that in a goiter clinic we meet with more than ten times as many female as male patients.

In the female: Chronic tonsillar infection in the female seems to be responsible for what I designated some time ago as the tonsil-thyroid syndrome. This clinical picture in a young woman consists of large diseased tonsils, diseased cervical glands, simple goiter and a more or less well-defined picture of mild hyperthyroidism. These young women show obesity, low basal metabolism, slow pulse, low blood pressure, excessive development of the breasts, menstrual disturbances and other less constant symptoms. These individuals are physically and mentally altered. When they marry, if they do, the charts show that there is a large incidence of sterility. At best they do not have more than one or two children. There are other details in the life history of these patients which cannot be considered here. Ordinarily these women enjoy fairly good health up to the time of the menopause. At the menopause we find a group of cases showing essential vascular hypertension. In going over the history of this group of cases we find that in their earlier life they suffered a chronic or severe acute infection. When married, the incidence of sterility among them was large, and the number of children in those that did bear was small. A careful study of the type shows

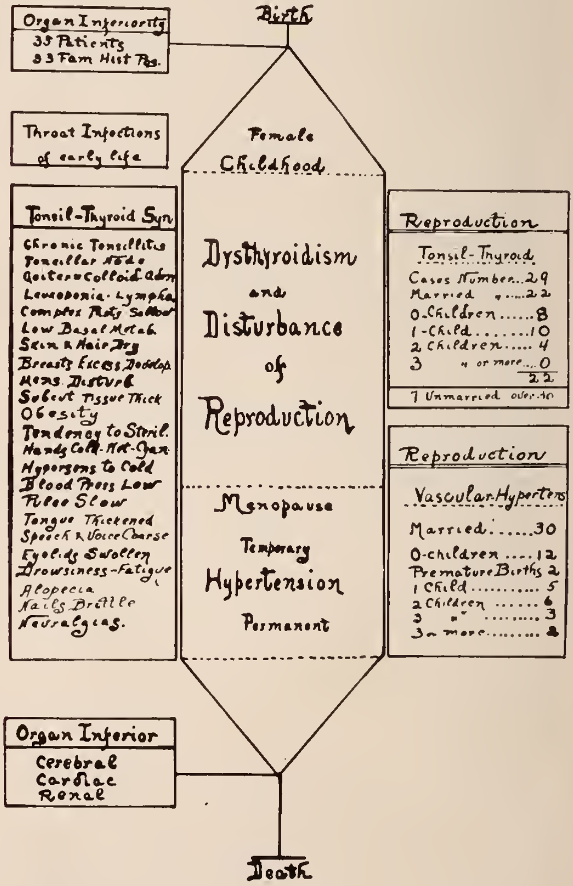

Chart No. II. Result of Infections in the Female.

that they may easily be grouped as cases of dysthyroidism. Some show hypothyroidism while others show evidences of hyperthyroidism. If one studies both of these groups it is easy to follow the entire course of their disease, both having had chronic throat infection, simple goiter, dysthyroidism, and a tendency to sterility. When the menopause is reached hypertension is found to exist.

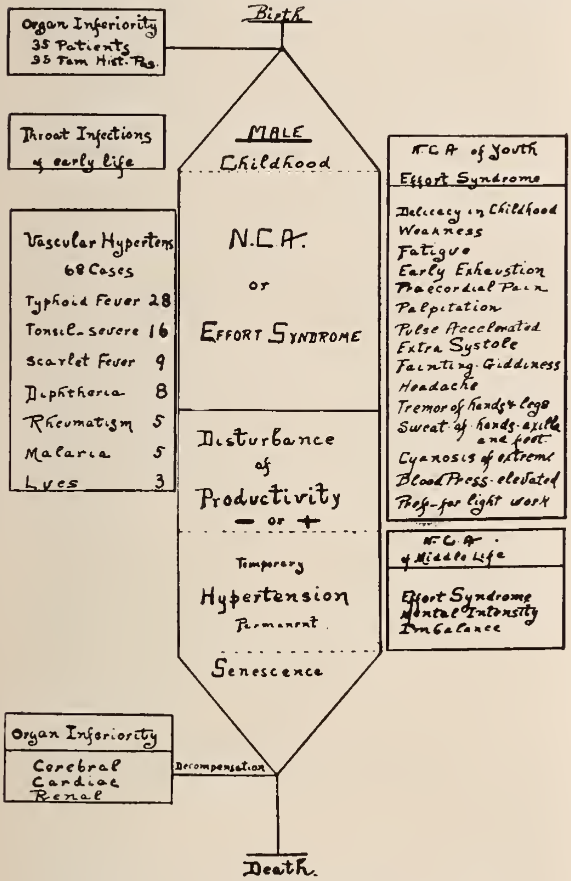

Chart No. III. Result of Infections in the Male.

In the male: The male children with diseased tonsils will show evidences of physical inferiority, frequent acute infections, pallor, a leaky skin and marked weakness. In youth and adolescence they will show a more or less complete picture of neurocirculatory asthenia. As seen, in this group the neurocirculatory asthenia is the product of a bad heredity plus a severe or oft-repeated infection. This type of case frequently finds its way to the cardiac clinic, and in the present nomenclature he is classified as a potential cardiovascular case, which he really is. He complains more or less of palpitation, precordial pains, dizziness, profuse perspiration, cyanosis and sweating of the extremities, etc. Such patients have a tendency to dyspnea on exertion and are incapable of a sustained physical effort. They show tremor and tachycardia which at times has caused many of them to be mistaken for cases of hyperthyroidism. It is needless to say that the number and severity of the symptoms present varies greatly and that many cases go by unrecognized. Even if recognized during the earlier life, we may find during middle life, when the nutrition of that individual is at its height, that the clinical picture may be entirely masked. If the case is a severe one, the neurocirculatory asthenia syndrome will persist and diagnosis will be easy even during middle life. If the case is less marked, the picture will be masked during middle life. This man will have put on weight, he will have taken a great hold upon his occupation and be very intense in all that he does. Because of his effort syndrome he still retains his intense dislike for physical exertion. This is the type of individual who has been described as the candidate for hypertension. He is in reality not a candidate, he has long been elected to that group. After senescence begins, he will sooner or later show an established hypertension.

Course and Sequela of Hypertension: Hypertension is not a spontaneous occurrence. It may be discovered unexpectedly but it does not come on suddenly. Vascular hypertension occurs for brief periods as a physiological response for many years before it is permanently established.

Temporary vascular hypertension is a characteristic of the neurocirculatory asthenic. Once it is permanently established, it continues for a variable time. Prognosis in vascular hypertension is a very hazardous undertaking on the part of the physician. The life of the individual with vascular hypertension does not depend upon the degree of hypertension. It will be determined by the organ inferiority of that individual. This organ inferiority becomes manifest by a decompensation or "break" in the heart, in the kidneys, or in the brain. Which organ will suffer that decompensation first is determined by an inherited tendency and by the remote effects of previous infections and injury. The individual who has suffered a severe course of typhoid fever or meningitis with severe delirium or has undergone a terrific mental strain will, when the time comes, show cerebral decompensation (apoplexy). The individual who suffered a pneumonia or rheumatic fever or diphtheria during which the myocardium was injured will have a cardiac decompensation. The one who had a severe scarlet fever or repeated tonsillar infections or who suffered from exposure with marked renal complications, will, when the time comes, show renal failure with all of its manifestations.

DISCUSSION

Dr. Ralph Pemberton (Philadelphia): I have been much interested in Dr. Barach's paper. It seems to me that he has made out a clear and sane brief for the viewpoint which he has reached. An analysis of these individuals suffering from hypertension is of value.

The phase of the question which Dr. Barach has most stressed in his title and discussion is the etiological, and in view of the short time at disposal, I should like to confine my remarks chiefly to this factor.

A very interesting field has been opened up in physiology by the work of Bayliss, Krogh and others. They have studied the capillary circulation, with the result that we are now coming to appreciate that while we have long considered the arterial system on the one hand, and the venous system on the other, we have been ignoring the existence and function of the large capillary bed which lies between. This capillary bed has also been the subject of study on the part of others, as, for example, Wallace and Pellini, who have described what they call a "capillary acidosis," brought about by changes in the capillary circulation. It is not yet known how these capillary changes are inaugurated, but investigations by Hoover, Rich, Dale, Richards and others indicate that probably some of the products of proteolysis may have had an influence in this direction. Thus, histamin is taken as a type of these substances, and by its use a "pooling" of the blood in the capillary area may be induced, which resembles the clinical condition known as shock. Our work in Philadelphia has led us to the viewpoint that minor disturbances along this line may also be produced by such factors.

There is reason to believe that hypertension is but one manifestation of a large syndrome, and in studying this syndrome we have found that it is possible at times to demonstrate certain changes in the gaseous equilibrium in the peripheral blood. We have been unable to explain these changes upon a purely chemical basis and have been forced to the tentative viewpoint that the vascular channels and rate of blood flow play a rôle. It is quite possible that the phenomenon which we recognize as hypertension represents an effort on nature's part to compensate for these capillary changes.

I am sorry that Dr. Barach did not say more about treatment. He has indicated in his paper that there is a metabolic disturbance in some of these cases of hypertension, and I should like to ask him whether he has had any success in treating such cases along metabolic lines. There is not a little evidence to indicate that a metabolic error is at the back of some forms of this trouble, and an interesting correlary to this is the fact that agents which alter metabolism may have an important influence for the better. Thus, for example, the use of radium under properly controlled conditions and in the hands of those who really understand this field, is sometimes followed by striking changes in the blood pressure and vascular system as a whole. In this connection the influence of radium in hastening metabolism may be emphasized as one of its most important properties.

I have mentioned radium simply by way of illustrating my point. In practice there are many other ways of influencing the metabolic equilibrium, and I have been gratified by the results which have followed treatment of some such cases along broad metabolic lines. Lacking any specific point of attack this attitude is thoroughly justified and should, I believe, have fuller consideration.

In closing, I should like again to express my interest in Dr. Barach's analysis of his cases. The data which he has presented should be of value for future reference.

Dr. E. J. G. Beardsley (Philadelphia): Dr. Barach's paper well illustrates the wisdom as well as the necessity of routine blood pressure estimations. Many physicians, I am sorry to observe, still appear to consider the sphygmomanometer a scientific toy and its use a waste of valuable time. This attitude of mind would soon be abandoned if such men would adopt the plan of taking routine blood pressure readings upon all office patients and especially of taking readings in those patients whose diagnoses were obscure. The sphygmomanometer is, in the opinion of the speaker, a more valuable instrument in medicine than the stethoscope. The stethoscope can be replaced, frequently with advantage, by the use of the ear, while we have as yet no substitute for the blood pressure apparatus.

One is frequently surprised to find excessive systolic pressures in patients whose medical histories and whose physical signs fail to indicate the presence of hypertension. High and low diastolic pressures are, potentially, more valuable diagnostic points than are high and low systolic pressures.

The more time we spend upon the use of practical instruments of precision in medicine, the less time and necessity there will be for philosophizing about questionable theories or untenable diagnoses.

Dr. R. R. Snowden (Pittsburgh): Dr. Barach has brought forward very valuable data and thought in attempting to determine what lies back of this condition of hypertension. It is interesting to consider how simple are the etiological factors which are accountable for such clinical conditions as are definitely understood. Thus the nervousness of hypertension or the mental and physical signs of paresis formerly aroused great speculation and numerous elaborate theories as to etiology, but in the light of our present knowledge are reduced to one definite cause. We sometimes wonder whether some one factor may be back of hypertension. Such studies as Dr. Barach has presented aid greatly in bringing to light the true factors which may be the cause of this condition. Taking up a large number of cases, considering these from childhood to old age and correlating all the various concomitant ideas is almost certain to reveal very valuable knowledge. We all appreciate very much the interest and value of Dr. Barach's paper.

Dr. Bernard S. Oppenheimer (New York): Everyone must agree with Dr. Barach as to the importance and value of obtaining the life history of these patients. It is for this reason that the family physician and private practitioner can obtain more valuable data from his records extending over many years than can the hospital doctor and consultant. For example, I followed one such individual with vasomotor instability for years. His family history was positive for psychoneurotic factors, he had cyclic vomiting in infancy, later dyspnea, palpitation and chest pain on physical exertion during adolescence, and at 18 years of age had the characteristic picture of neurocirculatory asthenia and was rejected by the army. I have not noticed that such cases develop hypertension. The cases of lymphatism seem to me to be particularly free of vascular disease and hypertension.

Among soldiers who broke down in France with neurocirculatory asthenia, one-half had a positive family and previous history of factors predisposing to psychoneuroses, and in almost 70% of these there was a history of constitutional inferiority (not mental). It is this group that inclines one to the view that an irritable weakness of the whole nervous system, including the innervation of the entire circulatory system, may account for the varying neuro-psycho-somatic symptoms. These cases are being followed, I believe, and it may be possible to learn their fate as to organic disease later in life.

Dr. Henry Pleasants, Jr. (West Chester): I have been particularly interested in hearing Dr. Barach's paper, as well as Dr. Pemberton's able discussion of it, supplemented by Dr. Oppenheimer's discussion. And, while I do not think that it is well for a mere general practitioner to attempt to cite cases which have not been as thoroughly studied as those of the gentlemen to whom we have listened, nevertheless I have recently had a case which so absolutely bears out several of the points that were made, not only by Dr. Barach but by Dr. Pemberton and Dr. Oppenheimer, that I think it is well to discuss it. In other words the case illustrates the middle stage.

A young man twenty-one years old, a senior at Princeton University, consulted me. The first symptom for which he came to me was acne of the face. He had a typical capillary dilatation of face and slight acne on his forehead. The thing that impressed me most was an unusually high arterial tension. His diastolic blood pressure was 145. His urine showed no albumin but was quite acid and showed a high degree of acetone.

Going over his blood pressure I found it 127 systolic at rest. Immediately upon exertion his systolic blood pressure jumped to 155. He was given a full course of purgation and alkalization. Following this he felt a good deal better and the acne on his face began to disappear.

I went over his history with his mother and found that he had suffered all his life from a condition of cyclic vomiting. The boy had been an athlete during his school days but at the time he consulted me he could not run or do anything requiring violent exertion without suffering cardiac discomfiture. I cite this case as an instance of hypertension.

Dr. Vere Treichler (Elizabethtown): I am only a country doctor in a town of three thousand, but I have a few old people under my care, whose ages average about seventy-four years, and I could not tell you what causes hypertension in these people. In some of these cases I have been especially interested and I have tried to find out to the best of my knowledge. Some of them have blood pressures of 190, and when I reduce them to 150 (which I sometimes do by nitrites and things of that kind, and diet) they do worse for me than at 190.

I have had some discussions on the subject. One remark was made by Dr. Hare, of Philadelphia, a remark that I thought very good: "People with high tension are sometimes like an old engine. If you don't keep the steam up she's not likely to run right; and if you do she's likely to bust."

Dr. Barach (in closing): Dr. Pemberton asks whether I have used radium in hypertension. I have not used it as a therapeutic measure in the treatment of this condition. I had radium used in a woman going through the menopause in whom we discovered what the surgeon called an adenocarcinoma. She had severe hemorrhages. Her blood pressure was max. 260, min. 160, pulse 84. The therapeutic result in so far as the bleeding was concerned, was a complete success; but the blood pressure curve, which I observed with great interest, did not change during three months following its use. I do recall that a large number of cases were treated in our vicinity with radium and radioactive waters, but I know of no permanent nor striking results from its use.

Dr. Oppenheimer asked how often I see patients of the neurocirculatory asthenic type who have not developed hypertension. I have no doubt there are considerable numbers of them, just as there are many who correspond in all details to the type I have attempted to describe. My observations up to the present have been largely limited to cases of hypertension in which I succeeding in retracing the steps in the earlier stages of their disease. Because for twenty years we have made no definite advance in our knowledge of the etiology of vascular hypertension, we who see this type of individual constantly are forced to grope about for a better viewpoint. For this reason I have submitted the problem to-day, in the hope that the experience of others will finally lead to correct answers to the many questions involved.

SOME PRACTICAL POINTS IN DIAGNOSIS AND TREATMENT*

HOBART A. HARE, M.D.

PHILADELPHIA

There are three themes which I wish to present to your attention. The first deals with the relative importance of systolic and diastolic pressures. It is becoming increasingly evident that the diastolic is in many respects the more important, for it represents what may be called the true or constant pressure, added to which is the pulse pressure, so-called, at each systole. It is important because it indicates the resistance against which the heart has to push the column of blood and thereby we gain a definite idea of the amount of work required of the heart, both at rest and under effort. It is also important because if repeated examinations reveal a high diastolic pressure there is reason to believe that this pressure is due to arteriocapillary fibrosis rather than to vascular spasm, for when spasm of the vessels is the chief factor it is prone to vary greatly at different times and under different circumstances. Again, a high diastolic pressure is important, because in my experience it has a more important prognostic value than a high systolic pressure for reasons already given as to cardiac stress, and also because if it is fairly constant it is almost always closely associated with renal disease in the form of contracted kidney. I think many of my hearers must recall cases in which diastolic pressures of 120 have had a far more rapid course towards a fatal end than those who have presented a systolic pressure of 180 and a diastolic of 100 or 110. Certainly

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

a large number of persons maintain systolic pressures 20 to 40 points above normal for years without seeming to have serious, if any, trouble. In other words, a diastolic pressure of 110 or 120, which is only 10 to 20 points above normal for a man of 50 or 60, is greater in significance than a pressure of 180 systolic which may be said to be 30 or 40 points above normal.

How far diastolic pressures can be utilized to determine the state of the heart is not easy to determine clinically. It goes without saying that a very feeble heart cannot maintain pressure of any kind, and as death approaches the diastolic pressure falls. On the other hand, have we not all seen cases of so-called rupture of compensation düe to valvular lesion in which many of the symptoms of this state of impaired circulation were most obvious; yet the sphygmomanometer has revealed a fairly high systolic and diastolic pressure, the failure being shown not always in a low diastolic pressure but in an impaired systolic pressure, so that there is a definite fall in pulse pressure. How far systolic pressure can be utilized to determine cardiac power is in my mind doubtful, because all of us have seen cases of high pulse pressures when we have been confident that myocardial degeneration is well advanced and when the electrocardiograph certainly has revealed degenerative changes as well. Indeed, from a clinical point of view, I think it may be fairly stated that those patients who have a tremendous swing in pulse pressure are quite prone to sudden cardiac death; whereas those who have a constantly maintained diastolic pressure are more prone to come to their end as a result of an apoplexy or an attack of uremia. I am conscious that by these remarks I may induce much discussion. That is my intention.

Closely associated with the matter just discussed is another, namely, that in many instances a high mean pressure is a deliberate intent on the part of the body to maintain the circulation through thickened or fibroid vessels. It is what I have called a "pathological norm," and the patient suffers if we succeed in lowering what nature has raised with a definite object in view.

Again closely associated with this subject is the value of a very great pulse pressure as a diagnostic aid in cases of aortic regurgitation. So far as I know there is no state in which the difference between the pressures is as great as in this disease. Much more important is the extraordinary difference between the systolic pressure in the arms and the legs when the patient is in the dorsal decubitus so that hydrostatic effects are eliminated. Immediately after Gibson of Edinburgh made this interesting observation I published in this country a paper confirmatory of his studies, and came to the conclusion that this remarkable difference in the arm and leg pressures was pathognomonic of aortic regurgitation. I still hold to this view when the matter of valvular disease is debated, but in the great influenza epidemic it is noteworthy that cases were met with presenting to some degree at least this sign, although physical signs of aortic regurgitation or a cardiac history were entirely absent.

A very interesting point in this connection, discovered by me when I followed Gibson's lead, is that the pressure in the arm and leg becomes identical if the patient is given a hypodermic injection of nitroglycerin or if the legs are put in a hot pack. Again, it is of interest to observe that this relaxation of the blood vessels in the legs does not cause the patient any distress, as one would suppose it would if we regard the high leg pressure to be designed by nature to maintain the circulation in the vital parts of the body. I confess that I have no adequate explanation of these two curious clinical phenomena. *A priori* one would suppose the high pressure in the arms and the greatly higher pressure in the legs is compensatory, but if so, such a pressure would seem to tend to increase the regurgitation at the aortic orifice. Here again is a subject for debate.

Last of all we come to the matter of the specific gravity of the urine as an important question in diagnosis and prognosis. Of course we have known for a generation or two that polyuria with a low specific gravity at night has renal significance, but we owe a debt to Mosenthal for emphasizing the importance of studying the specific gravity not in a single specimen or in a 24-hour specimen, but in 2-hour specimens in the daytime and a whole night's specimen, with limitation of fluid intake particularly in the evening. Such studies are, in a way, more important than the study of albumin and casts, because they show whether the kidneys are able to respond to the calls made upon them. A normal kidney varies from hour to hour in its activities according to the task set it. An abnormal kidney fails to do this. As I have said to my classes, a normal kidney is like a lad who when sent on an errand can run, walk, skip and jump, whereas a lame boy has to maintain a constant and impaired gait to get there at all. One of our medical staff at the Jefferson Hospital, Dr. Harold Jones, has done much interesting work on this subject, and if he is here I trust he will discuss it because his experiences are interesting and my time has quite or nearly expired.

If I have seemed to be too brief in the discussion of these topics, and if this brevity exposes me by chance to criticism in any remarks which may follow, my excuse must be that the chairman has already given vent to a sound which in medical language is called a "prodrome." This prodrome is indicative of the fact that he is beginning to think that I have reached the period of "crisis." It is better to be self-limited than to pass through a crisis during which time anything may happen, according to the will of the presiding officer.

DISCUSSION

Dr. J. I. Johnston (Pittsburgh): I refer only to this last thing Dr. Hare presents, the so-called gravity fixation test. It is very simple and has great significance, far more significance than most of the usual urinary findings that we use. I should like to stress this because I am quite sure the average man is not familiar with its use, the two-hour daily test and the night study. I think it bears out what Dr. Sydney Miller said about simplicity. This I should like to emphasize and heartily endorse. In regard to the other problems I should not like to say much.

Dr. Truman G. Schnabel (Philadelphia): I wish to add only a word. In exophthalmic goiter there is found the same excessive difference between the arm and leg blood pressure. Dr. Hare has not noted this fact in his paper but I know very well that this was an oversight on his part.

Dr. Albert E. Roussel (Philadelphia): The question of blood pressure is becoming an old one, yet I remember not very many years ago when I showed a sphygmomanometer before one of the county medical societies that it attracted universal attention.

Estimation of blood pressure by palpation should be done away with. The auscultatory method should be the only one used, for the reason that the diastolic pressure can be accurately obtained (which is necessary for the pulse pressure) and, as has been mentioned, this is of equal if not greater importance than the systolic pressure.

But it must be remembered that the question of blood pressure is a relative one. I have a patient under observation at the present time whose safety limit is 175 systolic. If it is reduced below this point pulmonary edema develops. And it is the rule that the first reading is apt to be above the patient's average.

Regarding the two-hour concentration test it is curious that it is not better known and appreciated. It requires no special apparatus and is of great importance, particularly in chronic nephritis.

And I wish again to claim that laboratory work is of prime importance. I can show you cases of chronic interstitial nephritis with normal urine, where the diagnosis would be impossible without a study of the blood chemistry or the examination of the eye ground or both.

Dr. E. J. G. Beardsley (Philadelphia): Dr. Hare's paper has given us, as his papers invariably do give, a number of valuable, helpful and practical suggestions.

Mosenthal's concentration test for renal function furnishes to the man who uses it extremely valuable information and requires for its determination a minimum of laboratory apparatus as well as of technical skill. It is not difficult to measure, or have measured, the amount of urine passed daily at two-hour intervals or to note the specific gravity of each specimen and to compare the quantity of night urine and its specific gravity with the amount and specific gravity of the various collections of day urine. The information obtainable by this series of tests is frequently more helpful than that gained from more complicated, difficult and, incidentally, more expensive procedures.

It would be a wonderful stimulus for the scientific advancement of our profession if every practitioner in our state possessed and made daily use of both a sphygmomanometer and a microscope in his routine work. The reports of clinical laboratories, valuable as they may be, can never compensate for the failure of the physician to carry out practical scientific investigations in his own office. Too many patients are still being informed that they have "Bright's disease" as a result of a chemical test of the urine revealing a cloud of albumin when an examination of the sediment of the same urine with a microscope would reveal the cause of the albuminuria to be due to other than renal pathology. Cystitis, prostatitis, vaginitis, pyelitis and similar conditions frequently masquerade under the diagnosis of kidney disease.

There is little excuse, at this time, for a physician not possessing and using a microscope for the benefit of his patients and his own scientific advancement. In the commercial exhibit down stairs a progressive firm advertises its willingness to place an excellent microscope and the necessary laboratory equipment in the office of any reputable physician for a small initial payment, with the understanding that the balance will be paid in similar small monthly sums. If a physician possesses and uses a microscope and a blood pressure apparatus he will make many correct diagnoses in conditions that would remain undiagnosed or would be incorrectly diagnosed without its aid.

It has been frequently and all too truly stated that a certain proportion of physicians who act as life insurance examiners frequently give more expert care to the clients of insurance companies than they render to their own patients. It is certainly true that life insurance examinations reveal a great deal of previously unsuspected pathology in men and women who regularly patronize members of the medical profession. We know that life insurance is strictly and solely a business proposition, and it should shame us to think that our professional services are sometimes less efficiently performed than are the carefully supervised insurance examinations that are performed on a business basis.

EPIGASTRIC ANGINA*

REED BURNS, M.D.
SCRANTON

There is probably no other organ in the body that the physician is called upon to treat more often than the stomach. And the patient is led to seek the advice of a physician on account of more or less pain or discomfort in the epigastric region.

This fact leads the patient to believe that the stomach is the seat of his trouble; but as epigastric pain is associated with so many different conditions, it is wise for the physician to make a careful study of each case not evidently due to a temporary functional disturbance.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

Among the causes of epigastric pain, there is one that is frequently misinterpreted, namely, epigastric angina. A correct diagnosis is very important. It saves the patient from unnecessary surgery and the surgeon from self-reproach. I have known of a number of these operations. The patient survived the operation, with increased suffering, and the fatal termination was apparently hastened by it, justifying that "ill opinion" our neurological friends have of their surgical confreres.

As we all know, angina may be fatal in the first attack or there may be a limited number of attacks. In other cases, life may be preserved for many years. In nearly all forms not rapidly fatal, much may be done for the patient's welfare.

In angina pectoris, the pain is usually in the left chest, the left side of the neck and the inner side of the left arm and forearm; but there are other cases of angina in which the pain is epigastric and only involves the chest, neck and arm in the more severe attacks. Still others occur in which there is no pain in the chest, neck and arm, but in which there is usually a sense of constriction in the upper part of the chest. These attacks are brought on, as in angina pectoris, by exercise, mental disturbance or distension of the stomach. In grave cases they quite frequently occur at night when the patient is asleep and in the recumbent posture. If the conditions mentioned are a cause of an attack, we would naturally think that sleep, with the recumbent posture, would be a protection from, rather than a cause of an attack, but such is not the case. The cause of the pain is not well known, but is usually associated with a diseased heart or aorta, heart strain, toxins such as alcohol, nicotine or a long-continued low-grade sepsis resulting in a neurasthenia or hyperalgesia of the cardiac centers.

The cardiac plexuses are made up of branches from the pneumogastrics, the six cervical sympathetic ganglia and branches from all the ganglia of the gangliated cord down to and including the eighth, with possibly some sensory filaments. Professor Thane says there is a strong reason for believing that the thoracic and abdominal viscera are supplied with sensory fibers derived from the spinal nerves and passing through the sympathetics. According to Dr. Head, those going to the heart are from the first, second and third dorsal, but Sir James Mackenzie makes no mention of these. If the heart is possessed of a pain sense it is an exception to the rule that hollow, nonstriated muscular organs are without it.

When the heart has undergone degeneration, due to lack of blood supply from the diseased coronary arteries, toxins, etc., to such an extent that its resting force is no longer capable of supplying enough blood to the heart and other tissues of the body to take care of the metabolic and catabolic changes that are continually taking place, then stronger nerve impulses are sent from the heart, and probably other tissues of the body, to the cardiac centers for more action.

If its resting force is incapable of meeting these demands, its reserve force is then called upon, which results, in time, in further cardiac weakness and an abnormal irritability or hyperalgesia of that part of the spinal cord with which these sympathetic nerves are connected. This hyperalgesia of the spinal cord is, in all probability, the cause of the pain in angina, and the location of the pain is at the distribution of those sensory nerves which are connected with this particular part of the spinal cord.

In early fetal life the auricles are below the ventricles and the nerves which supply them are connected with the spinal cord lower down than those which supply the ventricles, the lower filaments being connected with the spinal cord as low down as the eighth or ninth dorsal vertebræ.

No theory of the many that have been advanced to explain the mechanism of angina has been entirely satisfactory, but if the one here given is accepted, which Sir James Mackenzie regards as the most plausible, then we can easily see that disease of the auricles would produce reflex pain lower down than disease of the ventricles.

Sensation in the epigastric region is supplied by the sixth, seventh, eighth and ninth intercostal nerves. These nerves spring from the same part of the spinal cord that the auricular nerves are connected with. Therefore, if we have angina from auricular trouble, the reflex pain will be epigastric.

As stated above, no theory of the many that have been advanced to explain the mechanism of angina has been entirely satisfactory. Briscoe (*Lancet*, Dec. 17, 1921), states that the attacks of angina can be equally well explained on a respiratory hypothesis as on one of vascular origin. I do not believe they are due to any single abnormal condition.

We may have any known disease of the heart without angina. We may have any known disease of the respiratory organs, such as cardiac or bronchial asthma and chronic emphysema, without angina. We may have high blood pressure or low blood pressure with it or without it. In fact, during an attack the blood pressure may rise or fall. Then, is it not probably due to a coexistence of more than one abnormal condition, that is, a pathological complex? The respiratory center is in the medulla. When that is called upon for more action, nerve impulses are sent from it to the nerve centers with which the intercostal and phrenic nerves are connected. Then, does it not follow that if we can have hyperalgesia of the thoracic spinal cord from cardiac impulses alone it would certainly be increased by the two working together? The superior sympathetic ganglia and pneumogastric nerves are in close anatomical relation with the respiratory center and there is such a close correlation of their functions that an abnormal condition in one will sooner or later involve the others.

Allbutt believes that the pain in angina is due to disease of the large blood vessels; and he has presented his views so well that many men of large experience have modified their views somewhat by his teaching. He believes that the pain in angina pectoris is located in the ascending or the suprasigmoid portion of the ascending aorta and is due to tension or stretching of the outer or fibrous coat of the artery, in which pacinian corpuscles, or nerve end organs, have been demonstrated; and that the cause of the pain is an aortitis, acute, subacute or chronic, the causes of which, aside from senile atheroma, are sepsis, syphilis and rheumatism. If disease of the ascending or suprasigmoid portion of the aorta is the cause of angina pectoris, then disease of the lower thoracic or abdominal aorta would produce subdiaphragmatic pain. I believe there are good reasons for believing that epigastric angina may be due to more than one specific condition, and the same is probably true of angina pectoris.

DIAGNOSIS

The diagnosis is usually easy. It lies between diseases of the biliary passages, chronic pancreatitis, gastric or duodenal ulcer and syphilis of the stomach.

Epigastric angina usually appears after forty years of age. It is marked by pain coming on at intervals, induced by exercise, mental disturbance, or distension of the stomach with food or gas. It is relieved, more or less, by vomiting or eructation. There is hypersensitiveness to pressure over the painful region and in severe attacks more or less radiation of pain to the left chest, left side of the neck and inner side of the left arm and forearm, with dyspnea or a sensation of constriction in the upper part of the chest. This sensation of constriction in the upper part of the chest is very significant. In grave cases, attacks of pain at night arouse the patient from sleep.

I know of no other disease with this train of symptoms. In gastric or duodenal ulcer, taking food and alkalies relieves the pain. This, with the work of the roentgenologist and chemical examination of the stomach and bowel contents, is sufficient to differentiate between the two.

In syphilis of the stomach we usually have ulcer, with hourglass contraction in the early stages, followed later with thickening and more or less contraction of the stomach walls, with a markedly patulous pylorus. This over-patulous pylorus may let the barium salt through so rapidly that the roentgenologist may have trouble to get an outline of the stomach. These conditions, with the history, if you can get it, and a Wassermann, are enough to settle the diagnosis.

The diagnosis between epigastric angina and gall-stone colic is not so easy. In both we have epigastric pain and vomiting coming on at intervals, with more or less prostration, according to the severity of the attack. In gall-stone disease there is usually tenderness on pressure in the region of the gall-bladder and often hypersensitiveness over the right lower ribs, but the pain never radiates to the chest, neck and arm. It is not induced by mental disturbance, nor is there the same sense of constriction in the upper portion of the chest. Chronic pancreatitis is usually associated with disease of the biliary passages, but not always. When so associated, about the only additional symptoms are tenderness on pressure, a little above the umbilicus, with radiation of pain to the left scapular region. When not so associated we have epigastric pain, which may be intermittent, radiating to the left scapular region, tenderness on pressure above the umbilicus, disturbance of digestion, loss of flesh, and in some cases a perceptible thickening of the head or head and body of the pancreas. These symptoms are often mistaken for gastric or duodenal ulcer.

I should here like to refer to an article on Abdominal Migraine by Dr. Wm. A. Brams, of Chicago, published in the *Journal of the A. M. A.*, January 7, 1922. Dr. Brams says "the attacks consist, usually, of a severe cutting or boring epigastralgia, which is independent of and uninfluenced by food; and which may radiate in any direction, but is usually limited to the epigastrium. The vomiting is chiefly of bile and mucus and has no influence on the pain. The typical form of head migraine may or may not accompany the attack. It usually occurs in those who have been the subjects of migraine, and the attacks of epigastric pain seem to take the place of head migraine; or they may be intercurrent. Between attacks the patients are in good health."

There is very little in the English or French literature on this subject. Nearly all of Dr. Brams' references are to the German. Whether abdominal migraine is an entity or a nonentity, time alone will tell.

If rest of body and mental quiet is a protection against attacks during waking hours, why do they occur during sleep? This, like many other phenomena in this disease, is hard to account for. I can only imagine that during sleep, which is the resting period for the heart, nerve centers and all the tissues of the body, the heart, already tired, eases down until metabolic and catabolic changes in the tissue of the heart, and probably other organs, are not properly cared for. This results in vigorous impulses being sent to the cardiac and respiratory centers for help. The cardiac centers being already hyperalgesic, pain at the terminal filaments of the sensory nerves connected with that particular part of the cord is the result.

I have used the term epigastric angina for all those cases in which the most acute pain is epigastric but there is a marked difference, aside from this, in different cases.

During the past year I have seen the following five cases:

Case 1. A lady, 71 years of age. Severe epigastric pain, radiating to the left chest, neck and arm, with a sense of constriction of the chest.

Case 2. A lady, 70 years of age. Severe epigastric pain involving the lower left chest, no sense of constriction and no pain in neck or arm.

Case 3. A man, 50 years of age, a former athlete. Heart much dilated, with mitral regurgitant murmur. Pain entirely epigastric, with a sense of constriction in upper part of chest.

Case 4. A physician, 70 years of age. Most acute pain at tip of ensiform cartilage, radiating to fifth interspace at cardiac apex.

Case 5. A man, 54 years of age. Most intense pain in epigastrium, reaching down nearly to the umbilicus, radiating to nearly all of the left chest, also to left side of neck and arm. He had a mild degree of jaundice, was in bad condition, but had been prepared for operation.

TREATMENT

Those milder cases, due to insufficient food, insanitary conditions, mental worry, bad habits and the like, should have the insanitary conditions removed, as far as possible; those due to sepsis are cases for the internist or the surgeon, as the case may be. Wherever there is restlessness, insomnia and hyperesthesia the bromide of sodium with tincture of hyoscyamus, given in sufficient quantities to produce an abundance of sleep, and continued for months if necessary, will do many of these cases an immense amount of good. Those due to extreme sedentary habits, with very little degeneration of heart muscle, are markedly benefited by a well-regulated systematic course of exercise.

Where there is dilatation of the heart without either high blood pressure or bradycardia, rest and digitalis are usually beneficial. The treatment during the attacks of pain differs with the severity of the attack. In the milder cases of short duration, those remedies that stimulate eructation, and the inhalation of amyl nitrite, give marked relief. Nitroglycerin, when used in sufficient doses, is one of our most valuable remedies, both to relieve or ward off an attack. It can be given in much larger doses than I was formerly aware of, provided it does not produce head symptoms. The hypodermic tablets, 1/100 gr., when placed on or under the tongue are more quickly absorbed than when swallowed, or given with the hypodermic syringe. Some patients learn to carry them in their pocket and when they feel an attack coming on place a tablet on or under the tongue every few minutes until the attack is warded off or relieved, sometimes taking as many as eight or ten tablets. In the absence of nitroglycerin nothing equals the hypodermic use of morphine.

DISCUSSION

Dr. Arthur C. Morgan (Philadelphia): Dr. Burns has helped us to concentrate our thought on an unusual feature or unusual phase of the general picture or arteriosclerosis. He has well said there is no one cause that can be ascribed to or given as the explanation for the epigastric angina that occurs. Even in the same individual, while one cause may be active at one time, an entirely different cause may be active at another time, the underlying pathologic cause, however, is always that of arteriosclerosis, which seems in the given instance to have been emphasized in another portion of the arterial tree than the portion we find is associated with true angina pectoris. That is to say, if we have angina pectoris, then almost invariably we are going to find an aortitis with a narrowing of the orifice of the coronaries. Whether that is a permanent condition or whether it is a spastic condition, as in epigastric angina, instead of having a marked contraction of the coronary arteries we now have it at some of the other arteries that affect the blood supply to the epigastrium, as pointed out by Dr. Burns in his discussion of Head's classification. Head's classification needs to be kept alive in our minds and it is well for us, in connection with some of the graduate studies being advocated, to go over Head's classification of 1892 and 1893 and refresh our memories as to fundamentals.

Epigastric angina is not very common in syphilitics. It is more common in those who have arteriosclerosis from other causes. It belongs to those who, because of the wear and tear and the incidence of other factors, are the subjects of an arteriosclerosis.

The diagnosis, Dr. Burns says, is easy. It is, if you have your wits about you in the emergency that occurs. Most of these cases are misdiagnosed. Epigastric angina is often misdiagnosed as "acute indigestion." For years I have not been using that term without making a mental apology to myself, with a mental reservation as to what I mean to convey when I say a man has "acute indigestion." We should not be satisfied to use that term; we should never use the term "acute indigestion" carelessly. It means something that is lethal in its tendency, either in the one attack or one or more subsequent attacks that may occur. Acute indigestion, therefore, is a very important phrase that is loosely used, and that always implies pathology of an advanced degree. The patient has been the subject of a pathology of years; and in all epigastric angina, that pathology has gone so far now as to have overcome all tendency on the part to regeneration and to compensation for the damage that has been done. Therefore, these attacks of "acute indigestion" or epigastric angina and the like are parallel to decompensation in cardiac diseases and in renal diseases. The patient has reached his limit of reconstruction and of reservation.

We must remember that in arteriosclerosis the heart also is subject to certain changes. If we have hypertension in any part of the tree, localized or general, the heart must suffer in consequence because it is called upon to do more work. We always have an accentuation of the second aortic sound and our ears should be tuned to this accentuation, at least sufficiently to suggest to us the probability of peril to the cardiovascular system. In epigastric angina, pain is referred to that location but the heart tells the same story whether it is angina pectoris or epigastric angina.

We could go into the differential diagnosis of symptoms of pain in the epigastric region, and we could name many conditions which cause the pain in the epigastric region. Gastric ulcer is one of the common diagnoses that is thought proper when we find patients who are the subjects of epigastric pain. Some years ago a very distinguished surgeon from down in Florida was taken with what was diagnosed as acute fulminating gastric ulcer. He took the train or chartered a car and was headed for Baltimore. He wanted Dr. Finney to operate on him, but Dr. Finney was absent. A friend in Florida suggested, in consideration of Finney's absence, that he immediately go on to Philadelphia and there submit to the surgical operation that seemed so imperative. In Philadelphia, a distinguished disciple of Pasteur was ordered to operate upon this wonderful case of fulminating gastric ulcer. This surgeon in Philadelphia (who, by the way, did learn some internal medicine years before and had not forgotten it) put his ear to the man's chest and to his lungs and told him he had lobar pneumonia. This astounded the surgeon, naturally, and the Philadelphia surgeon refused to operate. Within twenty-four hours the patient had his crisis. He returned home a sadder and wiser man. All he had was a reflex pain in the epigastrium from the lobar pneumonia.

Acute indigestion and the cause of its occurrence at night have long interested me. Granted that the individual has partaken of some food, usually in quantity rather than quality, such as midnight lunches, after-theater parties and the like, and before the days of Volstead, perhaps, soda water on the side, and what happens? This man retires feeling good and sleeps for a couple of hours. He has an augmentation of tension because of the overwork on the part of the liver and pancreas. Because of the hypertension that ensues this man has autonomic reflex and this attack occurs one or two hours after he has retired. Then the attack of pain comes on. He suffers nausea and vomiting, and with it sometimes syncope and perhaps death, and of course, with this terrible angina. Relieve the stomach, which is usually more or less in a state of dilation, by emptying the stomach or by washing it out, either by intake of salt water or mustard water, and the man is relieved. Give that patient a good dose of nitroglycerine under the tongue and you will get very quick results.

Nitroglycerine has the wonderful effect, when placed under the tongue, of relieving a spastic condition, of inducing an equalizing effect upon the capillary circulation—a relief that does much for this terrible symptom complex. It acts more quickly, when put under the tongue or in the mouth than when the time is taken to prepare a hypodermic injection.

Dr. J. Norman White (Scranton): As usual, when Dr. Burns gets through, there isn't anything to add to the paper. You may discuss or comment on the paper, but there certainly isn't anything to add.

In the phenomena Dr. Burns speaks of the etiology is largely of the cardiovascular system. It is found commonly in men rather than women, because they lead the more strenuous lives; and in cases of people that lead sedentary lives, using the brain instead of the body, never resting the brain and never working the body enough. In other words, you have the same etiology that Dr. Morgan mentioned as the cause of arteriosclerosis.

The diagnosis must be made on history and subjective symptoms. Examinations do not amount to anything. You can feel nothing, you can see nothing, and the laboratory does not help you much. It is the history and the subjective symptoms that help. I do not agree that the differential diagnosis is easy. There are a dozen things that may cause similar symptoms—duodenal ulcer, gall-stones, lead poisoning, pleurisy, pancreatitis; even tumors of the mediastinum can give you epigastric pain, or cancer of the stomach may cause it, and that occurs at just about the age when you get angina pectoris. The explanation of the pain from an embryologic standpoint is one of the workable theories, and you cannot get away from it.

There is no way of proving or disproving the spasm theory. Dr. Burns did not discuss it. It is mostly German authorities that write on this subject, but it has been discussed by Cabot of Boston. There is a condition where there is a spasm of the blood vessels, something on the same plan as Raynaud's disease, and I think possibly that it is sometimes the cause of death. When I was coroner and posted people who dropped dead, sometimes no cause of death could be found. It might be that they had a spasm of the blood vessels around the fourth ventricle, and this condition may possibly have caused death.

Years ago, I operated on a woman for epigastric pain. Gall-stones was our diagnosis. She would vomit. She never had a typical tenderness, but it was periodic—it would come and go. We operated on her and she had no gall-stones. There was no pathology in the abdomen. I think it was a case of epigastric angina. Two years later she died of apoplexy.

The treatment, if the condition comes from a strenuous life, is to lead the simple life, to go back to nature. Use the body and give the brain a little rest. Handle something heavier than a lead pencil. Drugs are of little value. Change of occupation and mental rest are indicated.

Dr. Ernest Laplace (Philadelphia): In my first year as a student I read in old Dr. Loomis' book that neuralgia was the cry of the body, more especially of the nerves, for purer blood. Now of all the neuralgias, we know the most fatal is angina pectoris, and the varieties have been made more clear by Dr. Burns.

The physiology and the relation of the nerves to the various seats of pain by reflex action have been thoroughly established, but as yet I have heard nothing of the real etiology of this condition. We have become very proficient in the diagnosis of it. We have tried the treatment more or less successfully, but most of these cases end fatally and rather suddenly.

Neuralgia is the cry of the nerves for purer blood; therefore, there is a poison somewhere and it is up to us to look for that poison and find it. Until very recently no one ever thought of looking for it but only of diagnosing its presence. To-day, that great and most important subject that I hope is the real liberator of modern therapeutics—focal infection—opens up the avenue to the most thorough understanding of the whole subject. Whenever we have a spasmodic attack of any kind it is simply because the nerves at that moment cannot stand it any longer, not because of the poison which the antibodies of the body try to protect it against. Up to that time the cup is overflowing and then comes the spasm.

Well, let that be a blanket over the whole subject of spasms as exemplified here, and we shall have all seen these cases; it is a regular kaleidoscope. It is all different in different cases, but I do know this, that I have had on my books three cases that, so far, have had no more attacks for a year and a half. I had x-ray pictures taken of their teeth and four or five teeth showed decay of the alveolar process. These teeth were removed and nothing else done, and there has been no attack since.

Dr. White very lucidly told us that arteriosclerosis depended upon hypertension—our rapid mode of life and sedentary habits. In my lecture this evening I will tell you that Pasteur claimed that he had done something when he discovered the relation of microörganisms to disease; but his great discovery was the attenuation and increase of virulence of germs. Many microörganisms, by their sojourn of twelve hours in our body, generate poison that the body cannot ward against, and on their absorption arteriosclerosis suddenly occurs.

Of all the sites the gastro-intestinal tract is the greatest, and the individual with sedentary habits is more susceptible because the contents of the intestines remain twelve, twenty-four, or fifty-six hours. In that time these germs, that ought to have been expelled forty-eight hours before, linger there and rise to a high degree of virulence, and if their number is at all great, there follows arteriosclerosis and sudden death. Therefore, there must be activity and constant activity in order to force out the contents of the intestines, for the great source of focal infection is the gastro-intestinal tract. If you eat grapes the seeds are expelled after twelve hours in some individuals, while in other individuals three times twelve hours is required. What is taking place in the intestines that requires three times as long for these seeds to be expelled? The germs have risen in virulence.

There are two or three sources of focal infection. A well known source is the tonsils. The system has neutralized and neutralized their toxin and can't neutralize it any more, when an attack of neuralgia comes along; hence the pain; hence the so-called attack that we conveniently call neuralgia.

Let us turn over a new page; let us go into the modern side of it and into the future and look to the prevention through etiology. Let us remember that at the bottom of all our troubles are poisons, poisons that we take into our systems or poisons that are generated within us. At all events, it is up to us to find out. Now that we know these three sources of autointoxication or focal infection, in every instance let us have an x-ray photograph taken of the teeth. Likewise, let us examine the tonsils and their crypts. In every instance see to it that there is no delayed transit on the way from the mouth to the rectum. A delay of twelve hours is enough to start the process that may eventually result in disease. The disease that will take us all sometime, old age, is nothing but an arteriosclerosis. But let us prevent that by seeing that the contents of the intestines are expelled as soon as possible. If we do that we will have taken a great step ahead toward the prevention of arteriosclerosis and its various manifestations.

Dr. Martin T. O'Malley (Scranton): Really it is refreshing to find a surgeon who proves to be a real missionary in internal medicine. I think Dr. Burns' paper ought to be specially commended for the "Go Slow" sign with reference to surgical interference. This lesson was brought home to me forcefully a few years ago in an Eastern clinic where there was a collection of from twenty-five to thirty cardiac cases. Among these cases presented for examination, there were six that had been operated upon by surgeons of experience and thoughtfulness. They were all cardiovascular cases. There was no pathology to account for the surgical diagnosis that had been made. The diagnosis was largely of gall-bladder and stomach conditions, while the real conditions were cardiovascular. Contrary to the feeling of Dr. Morgan, whether or not they were selected cases, they were, with the exception of one, of syphilitic origin.

Dr. Burns (in closing): I have very little further to say. I want to thank the gentlemen who have discussed my paper for their very able and courteous treatment of the subject. I feel very highly complimented by having men of such ability take the trouble to come here and take part in the discussion. I also want to thank all the delegates and members present for the very complimentary attention given to the reading.

THE DIFFERENTIAL DIAGNOSIS OF SOME PARASITIC INFECTIONS OF THE HANDS AND FEET*

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The subject under discussion is one which at the present time is receiving a great deal of attention from dermatologists. Only relatively recently were some of the inflammations of the hands and feet rescued from the class of eczemas of unknown origin, and even more recently these conditions have become more prevalent due to a number of causes. The close association of a cosmopolitan population during the war and of men in athletic club houses, with the use of improperly sterilized towels, are two of the greatest causes of the spread of this type of infection. Also infections of this type which caused only very mild symptoms have probably been made worse of late by the general use of woolen socks.

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All these, as well as other factors, have caused an increase in the number of patients who came for relief from these conditions.

As the organism is an extremely resistant one and infection is probably far more easy than cure, the mycotic inflammations present quite a problem at the present time. The tendency some years ago was to class these cases as eczema of unknown etiology or as pompholyx or dyshidrosis. Darier believes, but says he cannot prove that all cases of dyshidrosis are mycotic infections, while Sabouraud believes that some cases are noninfectious and are of internal origin. The consensus of opinion to-day is probably expressed in these two statements and practically all cases resembling these inflammations are subjected to either antiparasitic treatment or to a very thorough search for fungus. Needless to say, antiparasitic remedies applied to a case of acute eczema of nonparasitic origin will aid materially in establishing a diagnosis but will, at the same time, cause extreme discomfort to the patient. For this reason many men believe that no case should be treated as parasitic unless the parasite has been demonstrated to be the cause. This is the ideal procedure and is a very good rule in acute cases; but in some of the acute and in most of the chronic cases, treatment must sometimes be instituted after only a clinical diagnosis, either on positive signs or by elimination. This last we think justifiable, because of the difficulty in demonstrating the fungus in many cases, or the loss of time entailed in waiting till it is found. Many times the fungus can be found by removing a suitable bit of epithelium and macerating it on a slide with hot 40% potassium hydrate and examining with the high dry lens. Mitchell says he can find the organism this way as surely as by any other method, while other men believe the cultural method to be better; but, as mentioned before, this entails delay. There are numerous organisms isolated in these cases but most of them belong in the following three classes: 1, epidermophyton; 2, trichophyton; 3, blastomyces.

The condition caused by these organisms vary with the organisms and with the patients. In view of some of our own cultures and other reports we feel that the same type of organism may cause several types of eruptions, the type and frequency being controlled to some extent by the susceptibility of the patient and the area involved. Susceptibility seems to be a very definite factor, as we have seen a number of cases where a husband would be infected for a long time and no sign of the condition would appear on the wife. On the other hand, Mitchell reports as a fairly common occurrence the infection of one by the other. The only factors in regard to susceptibility of which we are certain are hyperidrosis and injury. Hyperidrosis is present in the great majority of cases and severe exacerbations of chronic mycosis are produced by it. Injury we believe to be a definite factor, because many patients date a mycotic condition of the nail from some injury and, though it is difficult to establish injury as a factor in the lesions on the skin, it is at least reasonable to suppose that traumatism, whether severe or mild, would reduce the resistance of the skin to this or any other type of infection.

The varieties of eruptions are quite numerous, so that we shall have to confine ourselves to a description of the more common ones and merely mention other types which we see less frequently or which have been reported. Because of their frequency, chronicity and the fact that they are frequently unrecognized sources of infection of other parts, two varieties of mycotic infection are of great importance. The first is the presence of a fissured condition of the skin between the toes, particularly the smaller toes. Around these fissures is a thick, soft, white, sodden layer of skin which when removed leaves a shiny red surface. As the eruption spreads, vesicles form along the edges of the toes and may spread to other parts of the foot. We have found, and other observers have mentioned the fact that most patients believe this condition to be normal or due to excessive sweating and had it for years without any further spreading. Many times however, it is a source of infection for hands and other parts, and unless it is found and cleared one often finds it impossible to keep hands and feet from mycotic dermatitis. It is often difficult to isolate the fungus but as the appearance is practically diagnostic, one is justified in treating it with antiparasitic remedies. In the webs of the fingers the condition is quite similar, save that the vesicular character often is more marked and the white sodden thickened skin is not so frequent, due to the fact that the perspiration on the hands is not so confined. The usual picture is a small, dry, red, scaly, fissured patch. The edges are poorly defined and may be either vesicular or scaly. These types of infections on either hands or feet are practically always due to vegetable parasites and one need not hesitate to treat them as such.

The second type is not so common as the one just mentioned and also often goes unrecognized for years. Hodges had the condition on his own toenails for 35 years before the cause was definitely established and a cure effected. We have seen one case on the fingernails of 18 years' duration and cases of several years are not common. It may involve one or all of either toe or finger nails and persist here only, or may be a constant source of infection of other parts. The condition is one in which the nails are dry and brittle, they show numerous deep cross striations and may have longitudinal ridges. The end may be thin and broken off or protruding but having a very irregular edge. At the free edges are heaps of dry powdery scales in which it is frequently a very easy matter to demonstrate the fungus. Mild cases may lack one or more of these signs and are difficult to diagnose. The differential diagnosis here involves syphilis, psoriasis and atrophy of nail due to eczema of unknown origin or some general debilitating condition. In syphilis the nail is more thickened, consisting of successive plates of nail, giving a much thicker, larger nail. Psoriasis is not so much an involvement of nail as of nail bed and the thickening of the nail itself is not so marked. Atrophy of nail shows a thinner pitted nail and no heaped up scales. In all three of these conditions, lesions elsewhere may be of great value in establishing a diagnosis. In syphilis the Wassermann, and in atrophy the history and general condition of the patient are of importance.

Other types of the disease are not so easily diagnosed and at times require careful study before a positive opinion can be formed. As we mentioned before, multiformity of lesions, due to type of fungus, character of skin, duration and external conditions, make this a very interesting disease. The vesicular type may cover all of either hands or feet, or may be a patchy affair. It is not circinate and the edges are, only rarely, well defined. The vesicles, which are the most usual lesions, may begin as a few satellite individual lesions or groups around either of the places previously mentioned or they may begin as small, widely scattered, discrete, deeply seated, intensely itchy vesicles on all or any surfaces of hands or feet. On hands they are usually small, averaging about 2 to 4 mm. in diameter and are most often discrete at the beginning, but on the feet they may reach 5 mm. and are nearly always grouped but may appear singly. These may dry, leaving a small brown scale-covered spot, or groups may form which burst, leaving a denuded area which usually enlarges slowly. These denuded areas partially heal, leaving dry, red, scaly, fissured, sometimes excoriated patches surrounded by a ragged scaly epithelium with vesicles forming a slowly spreading edge. Due to various irritants such as water, cold, and scratching, a patch of this sort may involve all of both hands and feet. Rarely does it spread beyond wrists or ankles, which is a very important point in diagnosis.

This constitutes a hurried description of the usual forms of fungus infections of hands and feet. Any of these stages may be encountered. On the hands, probably the most common variety is that in which numerous discrete, widely scattered vesicles are present during the first stage of an outbreak. This condition causes such a small amount of discomfort that unless it progresses to a more severe form it is only occasionally seen by the doctor. The differential diagnosis between this and pompholyx was mentioned before.

We must differentiate severe and wide spread dermatitis of this variety from dermatitis venenata. In the latter condition the hands may be affected in a way that closely resembles mycotic infections. However, the arms and face are also nearly always affected, there is usually a history of contact with some plant, and the attack is somewhat more acute than even the most severe fungus infections. Here it would be well to emphasize the importance of primrose dermatitis. This condition very often causes a chronic, scaly, patchy dermatitis on the hands, and careful inquiry should be made in every case as to the possibility of contact with these plants. Other types of chemical dermatitis, such as are classed as occupational, are to be differentiated by history, involvement of arms and sometimes other parts as well as the hands, and lastly by rapid improvement when the irritant is removed and soothing remedies are applied. In severe fungus infections, soothing remedies will most often cause an aggravation of the condition. In dermatitis of toxic or unknown origin and odd types of erythema multiforme involving the hands or feet, the diagnosis is sometimes very difficult. The general condition of the patient and lesions on other parts of the body are the chief aids in differentiation. In regard to all these conditions, Williams quotes Darier, who says that eczema confined to hands or feet is extremely rare and he believes that after dermatitis venenata is eliminated all infections of hands or feet alone are mycotic in origin. In searching for positive signs of fungus infection the importance of finding a source of infection, such as webs of toes or nails, should be remembered. The association of hyperidrosis, due to hot weather or the wearing of woolen socks, is another point which may aid.

The last type we shall mention is the chronic type. In this the picture is made not only by the fungus but also by irritation such as scratching and ineffective treatment. We may have patches of thickened, lichenified, scaly, fairly well marginated dermatitis showing both fissures and excoriations. On the soles the appearance may be smooth, but there will be a thick callus, and a few deep-seated vesicles may be present. These lesions may remain unchanged for months or may slowly spread until all of the hand or foot is involved. At joints the fissuring and scaling is more marked than on other parts. The differentiation here involves chronic occupational types of dermatitis and peculiar forms of lichen planus. Both of these can usually be diagnosed only by the history, typical lesions of other parts and isolation of the fungus. This type is one that is probably caused by infection on a rather resistant skin and is a combination of infection and some other type of chronic irritation. For this reason differentiation is rather difficult.

There are a number of points to be considered in the differentiation of mycotic infections generally. Some have been mentioned before but will bear repetition. As Darier suggests, any dermatitis not of chemical or occupational origin and confined to the hands or feet alone should be considered as a mycotic infection unless proved otherwise. In cases of dermatitis the finding of a source of infection, as between the toes or a nail, should at once suggest this disease. Also it should be remembered that, not infrequently, this infection may spread to groin or axilla and the disease in these locations, which used to be called eczema marginatum, is an aid in diagnosis.

We have mentioned syphilis in connection with the nail only, but it should also be considered in relation to chronic, thickened, scaly palmar lesions. It is more infiltrated than mycotic infections and shows a scalloped edge, but even with these characteristics is sometimes exceedingly difficult to recognize. One rarely encounters a very severe dermatitis of this nature which may at some time be accompanied by scaly, erythematous lesions on other parts of the body than those mentioned. This is considered by some men to be an allergenic phenomenon, due to the absorption of toxic products from the seat of infection.

In conclusion, we might say that all these suggestions in differential clinical diagnosis are given with the fact in mind that the possibility of error is very great. Also it must be remembered that many of the points which are given as differential points are such only in the opinion of the majority of men to-day and are not absolutely proved facts. This, however, is due to the fact that the condition has but recently been recognized and is still under intensive study. We are many times inclined to agree with Mitchell in his statement that the laboratory method is the only certain method of diagnosis, but we have found it satisfactory on many occasions to proceed without isolating the fungus.

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DISCUSSION

Dr. Lawrence Litchfield (Pittsburgh): This question of Trichophyton infection is of great interest because many people have been on all sorts of incomplete, imperfect and inefficient diets for indefinite periods on account of supposed eczemas, due to dietetic disorders, who might be cured by about two and a half weeks' application of Whitfield ointment.

Dr. Frank C. Knowles (Philadelphia): In viewing this subject it might be rather wise to look at the hands first. What would be the eruptions that tend to attack the palms of the hands? A dread dermatitis and syphilis. If both palms were involved, you would naturally think of the secondary or generalized stage of syphilis. If you have one palm involved you would naturally think of the late or localized syphilitic eruption or tertiary eruption with its destructive action. Then you have ulcerations. What do you observe on the back of the hand? You might observe there an eruption that comes in the spring and the fall which we call erythema multiforme, a raised eruption. A considerable amount of the color can be pressed out. The lesions are about the size of a pea. The eruption lasts possibly ten days to three or four weeks and then disappears. Could we consider that psoriasis? Usually not. Psoriasis practically never comes on the palms of the hands and is unusual on the backs. In the North naturally we cannot consider eruptions on the back of the hand as pellagra. If you are living in the South you have to consider pellagra. So much for the hands.

How about the nails? If you have the edge of the nail raised up, with a whitish, thick material under the nail, very little involvement of the nail except possibly a little discoloration on the free border, you would have to consider psoriasis. If you had involvement of the nail where the nail is attached to the skin, you would have to consider that you might have an eruption spread from the skin onto the nail. Under these circumstances you would have to consider a dermatitis. If you have an involvement of the nail itself, with pits, irregular-shaped lines; if the nail apparently was a little thinner than normal and mostly elevated on the body of the nail, with this same particular condition on the attached portion of the nail, you would have to think of some constitutional disease. If you found the edge of the nail broken, irregularly shaped, under these circumstances you would have to think of a fungus infection of the nail. Between the fingers, if you found small pustules, if you found other kind of primary lesions, papules, vesicles, lesions located in the webs of the fingers, you would have to think of the so-called itch or scabies.

In regard to the plantar surface of the feet, we have to undertake exactly the same diagnosis as in the hands. If both feet are involved, you have to think of secondary syphilis. If one foot is involved, you have to think of the tertiary stage of syphilis. If you find that the foot is rather reddish-blue in color, and that it is a little bit soft with practically no eruption, you have to think of an unusual amount of sweating (hyperiodrosis) involving one or both feet. If you have a curious type of eruption with a shaped margin about it and rather reddish discoloration and a little scaly surface, you have what was spoken of in the past, before the ringworm fungus was discovered, as eczematoid ringworm. Later on the fungus was discovered. Now, with improved laboratory methods, with the use of the Sabouraud or the French medium imported from Paris, we find a large number of these scaly red eruptions showing the presence of fungus.

Therefore, if mild applications or the usual routine method of treatment do not eradicate the various lesions occurring on the palms and the soles, or on other portions of hands or fingers, germicidal and local applications are indicated. You will find that the germ theory is increasing, more organisms are being found in our skin diseases, and therefore it is of great interest.

It might be wise to mention, however, Dr. Jacob, blastomyces being found. It is nothing more than a yeast fungus in which you have small, rounded bodies with a double capsule. Yeast bodies apparently are more or less normally found on the skin surface. In this condition you have to differentiate very completely whether you have a pathological yeast fungus present or whether it is merely a normal inhabitant on the surface of the skin.

The subject is of extreme interest and of extreme profit to us all.

BEHAVIOR DISORDERS IN CHILDREN[*][‡]

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The object of this paper is to call attention to disorders of behavior in children which express themselves not only in acts of delinquency but especially also certain types of nervous manifestations which occur in children as the result of purely physical causes; to discuss the underlying factors which give rise to these conditions; and to make suggestions as to their treatment. When problems arising from disorders of the nervous system of various types in children, particularly those expressing themselves in behavior disorders, are brought to the attention of the physician, at once the greatest difficulty is met with in visualizing their real significance. Hence, one cannot escape resorting to the use of a classification of these conditions to a certain degree, although not always adequate or satisfying, upon which to form a basis to work out the causes which are responsible for their origin.

At the mental clinic of the Philadelphia General Hospital to which many children with behavior disorders are referred from schools and elsewhere the cases are grouped as follows: (1) Cases with personality defects and discipline problems, in which are included the physical disorders; (2) cases with mental deficiency; (3) organic cases, such as those which arise from epilepsy, syphilis and encephalitis especially; (4) endocrine cases; (5) the psychotic group.

In the first class of cases, the disorders manifest themselves along the lines of disturbed emotional conditions, hysterical manifestations and disorders of the nervous system, which give rise to hyperactive states, rebelliousness against discipline, temper outbreaks, lack of self-control, pathological lying, stealing and incorrigibility.

There is a group which is characterized by an opposite type which may be termed hypo-active states. In this group are included children who are inactive, tearful, depressed, sluggish in rising and dressing, disorderly in dress, dissatisfied, inaccessible and who lack initiative. To this group may also be added those cases which arise as the result of personality disorders and those which are the expression of conflicts with their environment.

Behavior disorders are often found to be due to retarded mental development. In this group are those presenting difficulties in making progress at school, disciplinary troubles, disobedience, stealing and untruthfulness.

These conditions may be the sequellæ of organic nervous diseases, as seen in those cases in which a history of epileptic attacks is frequently found, or there is a history of previous attacks of meningitis or encephalitis. Furthermore, they may be the expression of endocrine disturbances such as dyspituitarism and other disorders of the ductless glands. Finally, the disorders may be due to a psychosis itself.

In order to arrive at a satisfactory diagnosis in these obscure conditions, the methods of examination must be comprehensive. A routine physical examination should be made of all of the cases, routinely searching for sources of infection in teeth, tonsils or elsewhere, or for gastro-intestinal disorders, gastro-enteroptoses, anemic states, intestinal parasites, kidney conditions, states of acidosis, eye defects, endocrine disorders and states of malnutrition. Psychological tests should then be made of all cases, as well as a complete mental examination, including a study of the personality, and finally the social history should be investigated thoroughly by the social worker, thus obtaining information about the environmental influences as well as the school conditions.

In some cases, the cause seems to be largely in the field of some physical disorder and a lowered state of nutrition is found in a great many cases. The rôle played by infected tonsils and teeth and gastro-intestinal disorders must be taken into account, though rarely are these the sole causes. Quite frequently the trouble is found to be one of maladjustment and conflicts with home conditions or with the teacher or with companions.

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In the first classification, attention is especially called to a state best described as nervousness in children. I have met many such cases to which especial attention is here directed, which illustrate a type of nervousness in children which is associated with a state of acidosis, the symptoms of which consist of behavior disorders in the nature of stubbornness, temper outbreaks, epileptiform attacks, insomnia, restlessness, hysteria and other evidences of hyperactivity. These cases are always associated with disturbances of nutrition; the subjects are anemic, are underweight, and are not as strong as a normal child and characteristic of this condition are the vomiting attacks with anorexia, which are associated with acetone on the breath and symptoms described as cyclical vomiting. The following cases illustrate this type:

A child of two years and nine months never ate very well, refused to swallow, vomited readily and gagged upon any effort to force her to eat. She became very stubborn at meal time, refusing to eat, and it seemed as if she could vomit her meals at will. She would hold her food in her mouth for five or ten minutes and finally when urged sufficiently would swallow it with a great deal of difficulty. After a time, she would complain of feeling sick and then, after a hysterical crying spell would finally vomit. She had attacks of crying spells in which she would throw herself around and all efforts to quiet her, from kindness to severity, were of no avail. These spells would last an hour, leaving her exhausted. She had attacks in which she appeared to be day-dreaming and had to be spoken to several times before she would pay any attention to her surroundings. She was rebellious to discipline, said she didn't care, and got very cross if she didn't have her own way. These nervous states were invariably associated with a condition of acidosis and the breath became laden with acetone, when it was difficult to say whether the nervousness was the result of the acidosis or the acidosis the outcome of the nervousness.

A brother gagged when eating and regurgitated on the slightest provocation. He rotated his head from side to side, was sleepless and hyperactive and the regurgitations were associated with acetone on the breath. Two other members of the family were similarly affected.

Illustrating the hyperactive type is the case of a boy of eight with negative family history, who was very delicate as a child. The tonsils were cryptic, adenoids enlarged, circumcision was needed and there was congenital left-sided ptosis. The general nutrition was far below par, he was anemic and thin and he had been rejected from school because he was so nervous and fidgety. He appeared not to be able to sit still and crawled under the seats. He wet the bed and had apparently little control over his bowel movements. He slept poorly and got in and out of bed frequently at night and talked in his sleep.

The psychological examination showed a retardation of two years but he was not feeble-minded. The deficiencies consisted of facts that are usually learned at home as well as some that are learned at school. Symptoms began a year and a half previously but he was much worse in the last two months. He had never been promoted.

His stepmother reported that she could do nothing with him, he was up all night acting "funny" and by day he wandered away. He played with other children but not coöperatively. He had attacks of silly laughter, did "funny stunts" and fell over things. A rest cure was given to him at the Polyclinic Hospital, after which he became stable and obedient and, except for the mental retardation at the end of three months, he appeared to be perfectly normal.

The following case illustrates the hyper-active type. A girl of 12 with negative family and previous histories, complained of spells in which she shook all over and became easily excited. In these attacks, which lasted for an hour, there was no loss of consciousness, nor did she sleep afterwards. She was bright and alert, did fairly well in school, in fact was at the head of her class. She sighed and cried almost continuously, washed her hands a great deal and it took her an hour and sometimes two to get dressed and a half an hour to take a bath in the morning. There was apparently no reason for her sadness and she could not explain why she cried so much. There was no evidence of any endocrine disorders. The case was regarded as one of psychasthenia.

The following case illustrates a nervous condition, the result of nonadaptation to a severe emotional experience. A girl of eleven, with negative family history, developed a heart lesion after an attack of bronchitis at ten years of age. After having been told of the assault of a neighbor by two negroes who struck a woman over the head and seriously injured her, she became afraid of the dark, had headache, had car sickness and was anemic. She was depressed, preoccupied, afraid to go upstairs by herself or stay in the house alone, had cold, trembling hands and her mind pictured continuously the assault of the neighbor. After appropriate treatment, she recovered entirely.

HYSTERIA

The following case, a rather unusual one, illustrates what I regarded as a case of hysterical fugue. A girl of sixteen, who as an infant cried with pains in her legs and who had had chorea in childhood, otherwise had never been sick in bed except for measles and chickenpox.

Her progress at school had always been poor. Since she was nine years of age her attendance at school was frequently interrupted by attacks in which she became nervous, crying almost continuously for two days, and this especially around examination time and tests. A quick word would upset her. She stated that she would get up in the morning feeling "as if she were walking around the country like; it seemed like a dream but was real." Two weeks previous to her visit to my clinic at the Polyclinic Hospital, one evening between ten and eleven p. m. she went upstairs to bed but could not sleep. After a little while she arose, went down stairs and going out the back door wandered around the streets until she seemed to realize that she was in a square or park somewhere and said to herself, "Oh, if I only had a coat." Then she experienced again the sensation of strange streets and great fatigue and finally a man took her home in the early morning. She had had a disappointment the day previously, expecting to secure a job at the Victor Talking Machine Co., but it did not measure up to her expectations. She recently had been working at several places for short periods. Her menophania had not been perfectly established since two years previously and during her periods she was very upset, nervous and sensitive. Her physical examination showed little beyond general malnutrition. Under measures to build up her general health, there was marked improvement.

Illustrating the type of behavior disorders which arise as a result of hysteria is the case of a girl of fifteen whose sister suffered from convulsions but whose history was otherwise negative. Her symptoms began at the age of twelve, when she found suddenly that she could not open her eyes for fifteen minutes and was unable to see anything. She was not unconscious and there was no convulsion. She was always tremulous and dropped things out of her hands. She did very well at school but at home was not able to do very much as she tired so readily.

On examination, it was found that there was a hemihypalgesia, the conjunctiva was insensitive and the fields of vision were exceedingly reduced. On several occasions, the eye reports showed that the fields were found to be progressively enlarged and other occasions contracted. She had double vision, double ptosis and monocular diplopia. Later there developed hysterical attacks in which she would become rigid over the entire musculature and could readily sustain her weight supporting her head on one chair and her feet on another.

Later, she developed behavior disorders consisting of irregularities in conduct. She stole money on several occasions, would stay out late at night, refusing to tell where she had been, became irregular at her work and was unable to retain any of her jobs. She explained this by saying that she did not feel well, felt weak and would not work. There was family strife. On one occasion, she disappeared and wrote a note to her mother stating that she was intending to commit suicide, but came home the next day. She frequently remained away all night. She claimed to be working and brought home sums of money which she called her week's wages, but the suspicion was that she was receiving this money from men rather than from her legitimate earnings. Finally, she became pregnant, was sent to a reform school, and then afterwards to a school for feeble-minded children, where she remained several months. She returned home apparently very much improved in all ways and at present is well behaved, working and living happily at home. The Binet-Simon tests gave her a mental age of 9.8 years at seventeen years of age.

CONFLICTS

A case illustrating conflicts, is one of a boy of nine whose parents were separated. He had had spasms when teething and showed a tendency to shrug his shoulders and exhibited various other habit-tic movements. He was brought to the Polyclinic Hospital with the statement that he had peculiar behavior disorders consisting of contortions of the face and arms; when displeased he muttered to himself, and stuck pins in, punched and otherwise hurt smaller, unoffending children. At times, when spoken to, he refused to answer, looked at the teacher with a blank stare and appeared to be preoccupied, only answering after a number of requests. When excited, he tried twice to bite his teacher. When asked to explain why he behaved in this way he said he did not feel well and that he had a pain in the stomach and in his muscles. He did not understand why he became angry, saying "Something comes over me which I cannot control." He felt he ought not to act in this way but he could not help it. His studies made him nervous. He had fights on the streets when going home from the nursery. At night he was very restless and constantly complained of pain under the right ribs and under the right arm. In mental tests, he measured up to normal. He was placed in a class in which the teacher was tactful and understood him and, the conflict which was present with his former teacher being removed, soon there was great improvement in his symptoms.

A second case illustrating the presence of a conflict is that of a boy of eight who came to the mental clinic of the Philadelphia General Hospital, a child of unmarried parents, the mother sixteen at birth, frail, flighty and nervous and defective morally and whose own mother had been a prostitute. The patient was small and emaciated as a baby and had a very severe attack of the "flu" at the age of four. Circumcision, tonsillectomy and adenoid operations were performed at seven.

The chief complaint was nervousness, instability, stealing, and difficulty in managing and controlling. The cervical glands were palpable and the teeth decidedly notched and widely separated. The pupils responded poorly to light and not at all in accommodation. The bronchial glands were enlarged. The apices of the lungs showed impairment but there was no active tuberculosis. The tendon reflexes in the legs were present but slight. The spinal fluid and blood Wassermanns were negative.

The mental examination revealed the fact that the patient was a pathological liar and thief. He was overactive, jerky and tremulous. The psychological test showed that his general behavior and conversation were not in keeping with his potential ability as measured by the tests. His stealing did not seem to be the planful, premeditated kind of which a boy of his intelligence was capable. He betrayed himself in the most transparent manner and gave away what he took.

His stealing represented a mental conflict. He stated that an early experience of stealing was associated with an older boy who taught him to steal, and at the time he suffered headaches and dizziness before stealing.

Another case illustrating a conflict which was regarded as causative in the development of the behavior disorder was that of a boy of twelve, with negative family and previous histories, who came to the clinic with a record of having for sometime been disobedient and defiant. In school, discipline failed. He had been in the House of Detention twice and had run away from home. On one occasion, in a quarrel with another boy, he cut this boy's hand severely. Physical examination was negative except for enlarged tonsils and cervical glands. Wassermann reaction was negative.

The psychological examination showed a diagnosis of borderline mentality. On examination, he was found antisocial and rebellious against his social environment almost to the point of being paranoid. His companions picked on him because they were jealous of the fact that he had money to spend. He earned money by selling papers. He was not depressed; on the contrary, he felt happy. He denied stealing, though he confessed to having stolen food when he was hungry. He had an ambition to enter the Navy when he was seventeen. He was ill at ease at being interviewed and explained his delinquencies as follows: A boy, Anthony, with whom he associated, always upset him and caused trouble. Anthony finally had moved away and everything went along better afterward. Sometimes when the boys talked "dirty," it made him "mad" and he left them. He was interested in his work and spoke well of his teachers and realized that everyone was interested in his welfare.

The case now to be described illustrated again the behavior disorders arising as the result of a conflict. A girl of sixteen gave a negative family and previous history except for the fact that her mother had had rheumatism while carrying the patient. She was struck on the head by her stepmother a few months previously. The child had always been sensitive, kind-hearted, gentle, easily excited and talkative at all times. She was imaginative and inclined to exaggerate and was subject to spells of depression and irritability. Two years previously, the patient was observed to eat pencils and rubber pencil tops and chew up handkerchiefs. The complaint, on admission, was that she had screaming spells followed by violent trembling and severe headache. She was emotional and sighed often. It was difficult to get her up in the morning and she dressed slowly. She was over-religious. She slept poorly, had a ravenous appetite, was constipated, was disorderly in dress and about the house and imagined that people were talking about her. She wandered away from home for hours at a time with no explanation, was removed from school because the children made fun of her peculiarities. She had no insight into her strange conduct. On examination, the patient expressed clearly ideas of inadequacy. Small matters upset her and she cried easily. She was ambitious to make a career for herself.

Her psychopathological behavior was rather concerned with attempts at emotional adjustment regarding the following: (1) Intense dislike for her stepmother and general environmental conditions; (2) reaction to an early fright and punishment by stepmother, the result being headache; (3) reaction to her older sister leaving the Catholic Church, and jealousy of her sister whom her mother favored, and to the death of her sister Helen, who had died four months previously and to whom she was devotedly attached. It developed that the patient's sexual experiences were various. She had had no sex instruction. She was found in the toilet with boys at six years of age and was discovered with a colored boy for which her stepmother punished her. At 13 she also had sexual experiences. She was sent to St. Francis' Home and a month later the patient was reported as doing very well, was contented, happy, did her work well and wished never to leave the Home.

RETARDED MENTAL DEVELOPMENT

This is often associated with behavior disorders which first express themselves in difficulties of adjustment in school. For example: A boy of eleven and a half, whose father was dissipated, an epileptic and a poor provider, and whose mother was of a nervous type, talked some at two but following the measles did not speak again until six years, when he started to go to school and there he learned to talk again. The problem at school was that he was backward, impulsive, talked frequently, whistled, and was constantly out of order. He showed a distinct terror of illness. Psychological tests showed that performance tests were unusually well done, speedily and intelligently, but he failed in all tests above eight years' level requiring reasoning and expression of ideas such as comprehension, absurdities and similarities.

Mental examination showed oddities of behavior. He talked freely and straightforwardly and explained his disordered conduct in school on the ground that his teacher did not like him and that she was a Catholic. His aversion to Catholics grew out of the frequent contentions of his mother and father over religion, the mother being Protestant and hating the Catholics and the father being of the latter faith. He was not afraid of the dark, had no night terrors, no sexual irregularities and no enuresis. He could fight but did not like to do so.

A second case is that of a boy of eleven, with negative family history except that five brothers and sisters had incipient tuberculosis. He was brought to the mental clinic of the Philadelphia General Hospital with a long record of being sly and disobedient. He often screamed out at night, tore his bed clothing, and was very noisy and gluttonous.

He was expelled from school on account of vulgarity of speech and acts. He was a liar and would attack smaller children sexually, was most irregular in his habits and attendance at school and was regarded as incorrigible. He was whipped often at home, where the hygienic conditions were poor.

His mental tests showed that he was distinctly negativistic and quite inaccessible. He denied having done certain things that were disclosed in his record. His physical condition showed irregular, unequal pupils, the left being sluggish to light, negative Wassermann reaction and general physical state much below par. Under measures to build up and to establish proper discipline, at the end of two months there was marked improvement in his behavior and he became obedient and uniformly well behaved.

ORGANIC NERVOUS DISEASES

The next case represents pathological behavior as a result of organic disease. A boy, aged seven, with negative family and personal history, was clever at school prior to the last illness, fifteen months previously. The history obtained from the records of the Howard Hospital, where he was treated, showed that on admission there was headache and drowsiness, dyspnea, pain in the back and precordium. Twenty-five days before, he had had fever, occipital pain and delirium which was diagnosed as bronchial pneumonia. On examination, the knee jerks were increased, pupils sluggish to light, and outward rotation of the eyes went beyond the normal excursion. A diagnosis was made of encephalitis lethargica. He was discharged from the hospital at the end of six weeks and was sent to a convalescent home. While there, he became nervous, overactive, and incorrigible. Upon examination, it was found that he was nervous and restless. He could not sit still, was constantly twisting, was hyperactive mentally, very talkative and sleepless. The diagnosis was postencephalitic psychosis of a manic type.

A second case was that of a boy of 6½ with negative family and previous history except that the mother was nervous, who was brought to the clinic because he did not get along at school, would not follow instructions and was attentive only to story telling. He was restless, overactive, talkative, cheerful with a tendency to become exalted, and unstable. He had had one convulsion at ten months but none since. His memory for rhymes, poems and recent events was good. He fabricated elaborately and was very destructive. These symptoms followed an attack of what was regarded as "flu" three months before, after which he began to talk at random. Psychological tests showed that he was backward, with the main defect being distractibility of attention. This case represents a hypomanic type of individual whose behavior troubles appeared to be the result of a psychosis, following an infectious disease.

EPILEPTIFORM ATTACKS

The occurrence of epileptiform attacks is associated with behavior disorders in some cases. The following case illustrates behavior disorders which could be regarded as a mild psychosis. A girl of 14½ years who had had epileptic attacks since twenty months of age and who was always lovable, tractable, well behaved and coöperative, quite suddenly at the age of 13½ years, after moving to a new locality, became rebellious, defiant, a truant, absenting herself from home, running up accounts at the shops, and refusing to go to school. She applied for a position, made every effort to go out at night to the movies, and on one occasion sneaked out. These symptoms yielded in a few months when a change in environment was made.

A second case, illustrating nervousness and behavior disorders associated with epileptiform attacks, is that of a boy of seven in whom the complaint was that he laughed without reason at times, played truant, had violent outbursts of temper, was unable to get along with other children, was depressed and did not want to live. At six years of age this boy began to have convulsive attacks with increasing frequency until the last six years, since when he had had only one attack a year. The patient was in the 2 A grade, was stupid in the schoolroom, did not seem to comprehend and made very little effort to try to learn. He was deficient in spelling and arithmetic. The mental test showed a mental age of six years and one month. The sella turcica was small and there were no erosions. The tonsils needed removal and the general condition was poor.

ENDOCRINE DISORDERS

The case which follows belongs to the endocrine group of behavior disorders. A girl of nine (with negative family history except that one sister died of convulsions at seventeen months) could not learn at school, was impudent, readily excited and screamed without provocation. The physical examination showed that there was a physical overdevelopment, the gait was awkward and there were coarse tremors of the tongue and hands. The Wassermann reaction showed cholesterine but otherwise the examination was negative.

She remembered songs after hearing them repeated a few times but it had taken several months to learn the alphabet as far as E. For over six months she had vomiting attacks of sudden onset. She was very backward, inaccessible, overactive, disobedient, and easily agitated. This case was regarded as a possible endocrine disorder and she improved considerably under the administration of extract of the thyroid gland.

PSYCHOSES

Attention is called to the fact that psychoses themselves are the causes of behavior disorders in children. A girl of fourteen exhibited symptoms of a hysterical psychosis with hypnogogic hallucinations. The family belonged to a nervous type of Russian Jew and one of the brothers was an epileptic. She complained, when brought to the Polyclinic Hospital, of twitching of the hands, which she said was due to pain, and of a tendency to cry on the slightest provocation. She wanted to be by herself and did not play with other girls. She was worried about the deaths of her brother, who had died two weeks previously, and of her father, who died eighteen months before that. She fancied she saw a man at night, who came to the side of her bed and frightened her very much, and who always wore a mask over his face. She said "his eyes were blue and his hair light." He did not speak to her but carried a pistol and sometimes when her mother came to her side she thought she was the man. These attacks occurred at eleven or twelve o'clock at night and lasted about five or six minutes, and recurred every night for weeks. She appeared to be awake at the time, and usually she did not fall asleep until early in the morning.

She sometimes talked to herself at night, and during the day moaned to herself and cried, complaining of a burning sensation across her chest. The physical examination was largely negative and there was no evidence of hemianesthesia or other hysterical stigmata. She was a highly sensitive type with a very low state of general nutrition. After a protracted rest cure at the Polyclinic Hospital, she made a complete cure.

The treatment of these disorders consists (1) of the correction of the underlying causes, and (2) measures directed to overcoming the physical and nervous conditions which are the result or the outcome of the operation of these causes.

In searching for the cause of the disorders under discussion, we must ask ourselves whether there is any physical condition which needs correction, whether or not we are dealing with a pathological personality, whether there is mental deficiency present, whether the endocrines are disturbed, whether the symptoms are the sequellæ of organic disease or the result of a psychosis. Here is where a classification is of value, for as far as we know, the causes of these disorders may be traced by observing the sources which are indicated in the classification just outlined.

The first effort is directed to bringing about as good a general physical condition as possible. To this end, certain conditions which may act as reflex irritants must be removed, if possible. If a careful study of the eyes reveals defects in the vision, these are to be corrected. If the tonsils are enlarged and infected, they should be removed. If the teeth are in poor condition, a thorough dental treatment is ordered. If a study of the gastro-intestinal disorders indicates ptoses, stasis or gastro-intestinal toxic states, these call for appropriate treatment. Lastly, measures are used to build up the general nutrition, which in almost all the cases is much below par, as shown in anemic states, flabby muscles and defective posture. All these indications are best met by the rest cure, the importance of which in this class of cases cannot be over-emphasized. The rest, forced feeding, passive exercises and isolation from the old environment has a remarkable effect not only upon the physical and nervous conditions but upon the personality and outlook of the child. One sees children who are nervous beyond description, incorrigible, disobedient, overactive and impossible to control at home, when placed in wards of the hospital, put to bed and given massage, salt rubs, warm tubs, forced feeding and isolation from their environment, become changed children. They become cheerful and coöperative, are happy, obedient, and controlled, they put on weight quite rapidly and their blood states improve. The treatment can only be given away from home and preferably in a hospital or other institution. The isolation from home is of value not only for the child but for the mother, who has an opportunity of resting from her problem, giving her an opportunity to adjust herself better to the situation and also affording her an opportunity for conferences with the physician for the purpose of learning the best possible way of managing the child when he returns to his home, as far as rest, food, hygienic conditions and general management are concerned.

It is the duty of the physician also to confer with the teacher and it is often necessary to recommend a change in schools in order to obtain for the child an opportunity of being instructed by someone who better understands his personality. Also, beneficial results are obtained by a change in the type of school. Many of these children are defective and retarded mentally and develop their nervous manifestations as a result of the struggle to overcome tasks which are too difficult for them. In these cases, it is recommended that they be transferred to what is termed the orthogenic school, where the instruction is largely along the lines of manual training. Under these conditions, many of these children respond most encouragingly. Such a general plan of treatment includes the removal of habits of misconduct which, if allowed to go on, become fixed and in this way lay the foundation in future life for incurable incorrigibles.

Special attention is directed to the nervous manifestations which arise as a result of, or at the same time as, attacks of acidosis. These attacks of acidosis seem to be the result of intense emotional reactions which cause metabolic disturbances, expressing themselves in vomiting attacks and the presence of acetone on the breath and in the urine. These attacks are simply the manifestations of an unstable nervous system which reacts poorly to emotional experiences. In my experience, the diet does not seem to have much to do with these occurrences although, of course, at the time of the attack, it calls for restrictions in the diet until after the attack is over. It is in these cases that the rest cure is especially valuable, to which children adapt themselves very well, not only as to the isolation and rest in bed but to carefully directed forced feeding. These patients are usually very much underweight, anemic, have anorexia, and are poor sleepers. Forced feeding is a little difficult at first under these conditions because of the anorexia, but the nurse, by constantly encouraging the patient, succeeds after a little while in accomplishing the taking of quite large quantities.

In conclusion, a few words in support of an optimistic attitude towards the solution of these problems will not be out of place. At first sight, nothing seems more discouraging than the correction of behavior disorders, especially delinquencies. The difficulty of approach, the obstacles in the way of correcting the underlying causes and the lack of coöperation met with, all tend to make the prognosis and outlook discouraging. Working out these problems along the therapeutic lines briefly outlined above will often give very surprisingly encouraging results. The removal of the irritating reflex cause, the building up of the general nutrition and the resting of the overtaxed nervous system all help to give the individual, who to start with is weak and is still further weakened by the physical and environmental depressing conditions, a chance to recover from a condition which otherwise might become permanent.

DISCUSSION

Dr. E. E. Mayer (Pittsburgh): Behavior clinics testify to the modern tendency to see in conduct changes, not an ethical lapse but a failure of adaptation. This maladjustment is due primarily to conditions within the body, but sometimes is caused by mental reactions to situational conditions. Situational factors causing delinquency are chiefly those of faulty parental supervision, a lewd and alcoholic environment, bad companionship, and poverty. These social phases of the problem have been more and more called to our attention through the excellent work of social workers.

With this background investigated for him, the physician at his clinic makes a complete physical inventory and a study of the mentality of the patient and is able as a result to give a report covering these three phases.

In my clinic I group all factors under the threefold classification of medical, social, and mental before weighing their influence in the particular patient under consideration.

Rarely does an individual present only one reason for abnormal conduct. The physician too often, because he finds malnutrition, bad tonsils, defective teeth, or intestinal disorder, etc., sums up his opinion without looking further. The psychiatrist, too often starting his examination from another angle of the problem, is satisfied with finding a dunce or a dullard, or a dementia præcox make-up. And we all know social workers who are a "law unto themselves" and work out the unsocial problems with no thought of there being a medical problem! Dr. Rhein has shown the success such a clinic has which considers these clients in the right way. May I add that such a clinic needs for success a man like Dr. Rhein who, grasping all angles of his problems, can exercise judgment and discrimination in his treatments.

Dr. William N. Bradley (Philadelphia): I am not at all competent to discuss this paper from a neurologic standpoint, but after what Dr. Mayer has said, it is hard to sit still and not supplement him. As Dr. Rhein states, he has had a number of interesting cases in the Philadelphia hospital in which the toxic factor was large. I had the pleasure of seeing some of these cases. For instance, if Dr. Rhein will permit me, one little fellow of eight was taken into court because he misbehaved and attempted to kill his sister, and another boy of twelve was taken in who made one attempt at suicide. Changes in the dispositions of all types made them an intensely interesting series.

I want to point out, if I may, the importance of the mental examination of children before entrance into school. The importance of this is to find out the mental caliber and disposition of these children before they get into school life, so that defects may be corrected. Many of these cases, as you know, get into court and are committed to institutions for the feeble-minded and are placed with criminals because of their misbehavior. They are not handled properly, and I believe there is no more important subject being discussed to-day than that of mental hygiene and the so-called misbehavior of children.

Dr. Rhein (in closing): The thing which I wish to call special attention to is the favorable result which may be obtained by the proper management and treatment of a certain group of children, who at first sight present a most discouraging outlook. Those cases which are the expressions of organic lesions, those which belong to the epileptic group and those which are mentally deficient are the most unfavorable cases as far as prognosis and treatment are concerned. The psychotic group can very often be helped because psychoses in children have a very good prognosis; almost all of them get well or at least they recover from the attack. There are a number of cases, however, which appear to be mentally deficient but which are not really in that group but appear to be so on account of their general lowered condition. They belong, I believe, to the borderline mentally deficient cases. These cases can be helped very much and an attack upon the physical condition as well as the school, home and social condition produces astonishingly favorable results.

SELECTIONS

MIGRAINE*

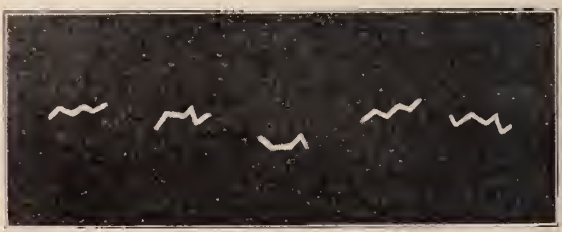
HAROLD L. FOSS, M.D.

DANVILLE

The great frequency with which those leading sedentary lives are the victims of periodic attacks of sick headache and especially the high incidence with which I have noted it appearing among my own professional associates, has lead me to make a brief study of this extremely annoying condition.

Migraine, or hemicrania, or, in the parlance of the layman, "sick headache," has been known and described since the days of Aretæus and Celsus. Galen wrote of it and indeed gave it the name hemicrania.

Women are more often affected than men. Position, occupation or social standing play no part. An attack of migraine is classical and stereotyped in its symptomatology. The sufferer is usually forewarned of its approach by peculiar eye sensations, at first a faint blurring of the vision especially noticeable if printed matter is before the eyes. A chilliness supervenes or, in its stead, a sensation of a warm glow throughout the body and the face may become flushed. The ocular symptoms become more marked; the blurring increases so that it becomes impossible to continue reading or to focus clearly upon distinct objects, and peculiar, zigzag scotomata (fortification figures) appear. Gradually soreness becomes manifest throughout one side of the head, although it may be frontal and behind the eyeballs, and becomes more and more intense. The eye symptoms last but ten or fifteen minutes and usually disappear as the headache increases. Nausea and vomiting then develop, though with the milder forms of migraine these symptoms do not always appear. The headache becomes progressively severe until it is splitting and almost unbearable and finally, after persisting for three to six hours (in the severer form even for several days) disappears, and the patient, except for some slight lassitude that persists for a short time, is completely restored and feels as well as ever. The pain is always deep in the skull, never superficial and may radiate to the temple, the nose and to the back of the neck. Its intensity varies from mere discomfort to extreme agony and in very severe attacks the picture is often that seen in cerebral tumor.


Fortification Scotomata

There are abortive forms, as all migraineous individuals well know, mild attacks in which nothing but the scotomata appear, accompanied perhaps by slight chilliness and a sense of depression unaccompanied by headache and followed usually in an hour or two by complete relief. However, the typical attack is usually ushered in by the occular symptoms and a feeling of depression, coming on suddenly and unexpectedly and always a sure warning to the chronic sufferer of the approaching attack. With the first sign the sufferer, apprehensive and heartsick, usually drops everything and crawling to his room, lies down to wait the coming ordeal. The attacks recur with varying frequency until middle life when, with most patients, they become less frequent and severe and often disappear by the end of the fourth decade.

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* Read before the Montour County Medical Society.

A thousand conditions have been mentioned as the cause of the syndrome. Intestinal intoxication, constipation, gastroptosis; and so the alimentary tract is attacked with countless preparations aimed at correcting "biliousness," or diets complicated and bizarre are devised and the sufferer is sentenced for the rest of his life to eat from a diet card. Such means are as a rule useless and often do more harm to the patient than the migraine they aim to cure. The avoidance of overeating, of overindulgence in tea and coffee, alcohol and tobacco are advised, but such abstinence is only relatively helpful. The avoidance of stress, hurry and mental strain, undue pressure, etc., are helpful suggestions in a general way but do not get at the seat of the trouble wherever it may be.

Pargnez and Nast have called attention to what they term alimentary anti-anaphylactic treatment of migraine and the possibility of preventing attacks by administering small doses of peptone before meals. They point out that attacks are frequently precipitated by the ingestion of certain substances, notably chocolate, and have succeeded in preventing attacks in patients definitely susceptible to chocolate by administering peptone, following which chocolate may be taken with impunity. Rupert and Wilson have stated that patients suffering from migraine show some abnormality of the stool, usually increased putrefaction, with increased blood pressure and delayed kidney function with disturbance of nitrogen output. Emliou has discussed the theory of intestinal intoxication but emphasizes the fact that, although constipation is often the rule with the migraineous individual, the disease is common with those who are not so troubled, and frequently attacks occur when the colon is functioning most regularly. Williams attributes the disease to faulty protein metabolism and states that the common feature of all cases of migraine is an insufficiency of carbohydrates in relation to the caloric need. With the average diet there remains about 25% of unutilized protein that has to be disposed of in the urine in the form of various nitrogen compounds. The important points in the treatment, according to Williams, are reduction in proteins, improvement of metabolism and furtherance of saline tissue exchange. He suggests limiting the proteins to 50 grams per day, supplying caloric needs by increasing the carbohydrate intake and supplying salines sufficiently in the form of fruits and vegetables.

Most migraineous individuals experiment with various forms of treatment and in their desperation run the whole gamut of drugs and quack preparations, even resorting to such powerful sedatives as cannabis indica and morphine. The anilin derivatives are the most powerful analgesics in the treatment of this condition and form the bases of most of the headache tablets and powders so extensively sold. Bromides and caffein are frequently combined with the various coal tar products. The use of opium indiscriminately prescribed for the relief of migraine has been a potent factor in the production and perpetuation of the drug habit.

The endocrinologist has his fling at the condition, and the altered blood pressure, the supposed change in blood sugar content, the slow pulse, the sense of fatigue preceding the attack, all point, according to Timme, to involvement of the pituitary, and the author exhibits numerous roentgenograms of patients with migraine, showing marked erosion of the clinoids, to bear out his contention.

The resemblance between migraine and epilepsy is remarked by nearly all authors. Both are characterized by periodicity, often have preliminary aura and both usually end in a terminal sleep. It is possible that both are referable to similar cerebral changes differing only in degree.

Late authors incline to the vasomotor theory of the cause of the migraine, and Edmyer assumes hyperemia and anemia from vascular spasm, which act upon the vessels of the brain and dura and eventually on the nerve endings, as the condition within the cranium which produces the pain. A plausible theory has been offered by Spitzer that the attack is a symptom complex called forth by an acute transient closure of the foramen of Monroe, with consecutive cerebral congestion, and the relative stenosis of the opening which underlies the lasting predisposition to such temporary closure is the essential feature in the disease of migraine.

Spitzer points out that the headache of migraine or from cerebral tumor is due to pressure upon the nerve endings in the dura. Vomiting occurs in all conditions leading to an increase in intracerebral pressure, and the author offers as an explanation that it is due to stimulation of the vomiting center in the medulla through the recurrent meningeal branch of the vagus.

Tilston believes that the condition, especially in children, is often due to hypersensibility to proteins, especially those of milk and eggs, and emphasizes the fact that in most cases the disease is inherited much as is gout, asthma or diabetes, that its incidence increases after puberty and, in women, decreases after the menopause.

Sluder and later Barlow have suggested that migraine may be due to involvement of the sphenopalatine ganglion, and both have relieved a large number of patients by cocainization of the ganglion and treating it with silver nitrate. That clear-cut cases of Meckel's ganglion headaches occur as separate and distinct conditions from true migraine, must, however, be borne in mind.

Following the work of Weed and McKibben, which demonstrated that the pressure of cerebrospinal fluid could be markedly reduced by intravenous injections of strong solutions of sodium chloride, Cushing and Foley found that similar reductions could be accomplished by the simple alimentary ingestion of strongly concentrated solutions of salt. It was pointed out that headaches treated with saline purgatives were relieved long before the cathartic action of the drug had taken place, so that if the headache of migraine results from increased intracranial pressure, it seemed logical to apply the method of reducing it by the administration of salt. Persons suffering from migraine are unable to retain in the stomach quantities sufficient to have the desired effect, but Hughson has suggested the use of a salol-coated tablet, containing 1 gram (15½ gr.) which passes unchanged through the stomach yet liberates the salt when the secretions of the intestines are met.

Hughson advises that two or three tablets should be taken every five minutes until eight or ten are administered. Usually relief is obtained in twenty to thirty minutes. By this means the cerebrospinal fluid pressure can be reduced 50 mm. by the ingestion of 1/6 grm. (2½ grains) of sodium chloride per kilogram of body weight.

Moebius long ago pointed out that migraine is hereditary in 90% of the cases. A disease is considered hereditary only when it is transmitted as a part of either the male or female germinal cell and becomes an integral part of the product of their union. When such transmission occurs it continues from generation to generation in a fairly definite numerical ratio. The main factor of the disease must be present in one or the other parent and is continued in the offspring according to the law of the segregation of characters as set down by Mendel in 1865.

There has recently been revised interest in the investigations of Mendel and in the laws established by him, and much research has been carried on in the endeavor to cast new and brighter light upon many of the questions of disease which have so far been but imperfectly understood. Migraine was considered hereditary long before the days of Mendel but only recently has the examination of a large amount of clinical data on the part of Buchanan and others definitely established the fact.

The Mendelian law of the segregation of characters may be demonstrated in the transmission of definite physical characteristics in animals, birds and even plants. The numerical ratio of the Mendelian phenomenon may be shown in the breeding of the garden pea.

Buchanan, in a study of 1,300 patients suffering with migraine and examined at the Mayo Clinic, selected 127 families in each of which there were at least four offspring, and from data reached from the latter demonstrated the approximate 3 to 1 ratio of Mendel and conclusively proved that migraine is an expression of the Mendelian phenomenon with an exact ratio of 3.08 to 1. Thus, in a group of 100 families in which either mother or father were migraineous, migraine was present in 143 of the offspring while 488 were free, a ratio of 3.13 to 1. In 3 families in which both parents were migraineous the total number of children was 15 and all had migraine.

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SOME RECENT DEVELOPMENTS IN SURGICAL RESEARCH*

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PHILADELPHIA

It seemed to me that I could best play my part in acknowledgment of the honor you have conferred upon me by attempting to tell you of some of the work recently done in the Department of Surgical Research of the University of Pennsylvania, and by endeavoring to point out the direct practical bearing of these results on the everyday practice of medicine and surgery.

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*An address delivered before the Lehigh Valley Medical Association at Bethlehem.

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I. High Intestinal Obstruction

For a good many years we have been working at the problem of the cause of death in high intestinal obstruction. The intervention of the War sadly interrupted the progress of the study, as it interrupted many things, here, there, and everywhere; yet in the last two years we have arrived at results which have cleared up, for us, some of the questions.

The latest statistical compilation shows how unsatisfactory the practical aspect of the problem is. Of 3,289 cases of acute ileus collected by Guillaume, the mortality was 63.2%. This is a sad commentary upon the lack of surgical advance, when one thinks of what has been accomplished in the handling of all other forms of acute abdominal conditions, with the possible exception of acute pancreatitis, from which, indeed, the condition of high obstruction is hardly separable, from the standpoint of diagnosis.

Richardson reports a mortality of 32.5% in a series of 46 cases operated within the first 48 hours, and a mortality of 48.1% in 54 cases operated after 48 hours. He therefore makes a plea for early diagnosis, but further observes that the difficulty lies in the absence of signs confirming a suspicion of obstruction.

Such are the sad clinical facts, and the problem becomes, from the practical side, the old one of early diagnosis and rapid transport to an operating table. But how is one to know when one is confronted with a condition of obstruction? I wonder whether some or all of the trouble here is not due to the teaching in the schools which points to the necessity of making a definite diagnosis in every case, to the feeling that the physician must know just what is wrong before calling the surgeon—a natural human desire, no doubt? What I mean is, should we attempt to teach the ways and means of making the differential diagnosis between the catastrophes of the upper abdomen, or should we teach only the signs and symptoms of disaster?

I believe we can learn a lesson from the history of the cancer problem. There was a time, not so very long ago, when the teaching of cancer of the breast was laden with much differential diagnosis, when the difference between a scirrhous cancer or a cystic degeneration seemed of import; but now the only justifiable teaching is that anything in the breast which does not belong there should be treated as though it were a malignant growth. So I would propose the dictum: any belly-ache of sufficient severity to require morphin should be given a ride in the ambulance instead. If it is only green apples, the ride will make the patient more careful in the future.

The symptoms of high obstruction do not at first differ from those of any other intraperitoneal calamity. The patient is hard hit, death is inevitable, and those who have seen such patients know what I mean, without a description of the Hippocratic facies, etc. etc. Let us be content, therefore, with the statement that severe intra-abdominal signs mean the probable necessity of operative interference. Let us not wait for localizing signs, but get the patient where surgery can be done if necessary; and in the meantime, do not paralyze peristalsis with morphin, for this increased peristalsis, as we shall see, is Nature's attempt to get rid of the poison.

These statements are not made from consideration of the clinical facts alone, but are to be deduced from the facts gained in the study of the experimental condition. The problem has been worked at, on, and over for many years. The earliest recorded work we have found is by Amussat, in 1839; in the time since then, drawing close to a century, many theories have been advanced.

This earliest theory, advanced in 1839, was that death in high obstruction is due to the stagnation and putrefaction of the intestinal content. This theory has been disapproved by many, approved by others, and does not materially differ from the point of view advanced recently by Dragstedt and his coworkers. I think that we can show conclusively that the intestinal content has nothing to do with the problem.

With the development of bacteriology, interest centered in the rôle played by bacteria, and the theory that the symptoms and death were due to a bacteriemia, arising from the content of the intestine and passing through the distended and weakened wall, came to the front. This theory was disproved by finding, in many cases, no bacteria in the blood stream.

A third theory deals with the toxicity of the normal secretions poured into the upper duodenum. Our own work began with a study of the clinical fact that acute pancreatitis and high obstruction cannot be separated without operation, and we looked for a common cause. This idea is upheld in the most recent work upon the subject, and yet we ourselves have abandoned the idea of as direct a connection as we at one time thought existed.

A fourth theory ascribed the death to the cerebral anemia which resulted from the congestion of the splanchnic area, or in other words, to the mechanical concept of "shock." While we have shown that the poison concerned can be formed under conditions of portal obstruction, the fact that cerebral anemia from hemorrhage offers an entirely different clinical picture, disproves the theory of "shock."

It is worth while to digress for a moment and note this difference; it is the reason why I find it difficult to accept any explanation of "shock" which is based upon a primary effect upon the brain. The shock and collapse of cerebral anemia, as after severe hemorrhage, is marked by symptoms of primary effect upon the higher centers—black specks before the eyes, fainting, loss of consciousness, together with the fall of blood-pressure. But the shock and collapse of high obstruction or acute pancreatitis is marked by a clear, often hyperactive brain, until in the late stages the fall of blood-pressure and the action of the poison has dimmed the higher faculties.

A fifth theory, that of death being due to reflex irritation of the sympathetic, has no real foundation.

A sixth theory held that a disturbed circulation is responsible for changes in the intestinal wall, such as necrosis, which changes are the cause of the symptoms and death. This is disproved by the fact that the intravenous injection of the isolated poison causes death with typical symptoms, without at least any of the gross changes, such as necrosis, which mark the disturbances of the circulation of the intestine.

A seventh theory held that death is due to the rapid and extreme dehydration of the tissues, due to the vomiting and purging. There can be little dispute that an extreme loss of water may be a factor, that the addition of water does prolong life. Yet the theory cannot stand when it is seen that an intravenous injection of poison into a normal animal may kill before any vomiting or purging has occurred.

An eighth theory is that under the conditions of obstruction some toxic element is elaborated by the cells of the mucous membrane of the intestine. This theory has been questioned but not disproved, and is the one toward which we lean.

Our interest in the problem began with the fact that it is practically impossible to differentiate clinically between an acute pancreatitis and a high obstruction. The cause of death in pancreatitis is without doubt the proteolytic ferment of the pancreas, the trypsin, which is set free in active state in the fluids of the body. Normally this ferment is inactive until it has reached the lumen of the intestine, where it meets another substance, a product of the intestinal cells called enterokinase, and is by it transformed into the active ferment. Under the conditions giving rise to acute pancreatitis, which are conditions in which the cells of the pancreas are injured by trauma or embolism or thrombosis or by certain infections in such a way that they die and become subject to self- the food in the inside of the intestine, but all trypsinogen into trypsin, which now attacks, not acts as does the enterokinase and activates the digestion, or autolysis, a substance arises which the protein of the body with which it comes in contact—in the pancreas itself, in the abdominal cavity, in the lymph and blood streams. Whether the actual toxin is the product of the proteolytic breakdown of the body protein or whether the ferment itself may be looked upon as the toxin is not clear, nor does it much matter.

Our work leads us to the conclusion that high obstruction is entirely comparable to pancreatitis in this way. The intestine elaborates a proteolytic ferment which normally acts upon the food in the intestine. Under the conditions of obstruction this ferment is absorbed into the lymph and blood streams, and we have a condition entirely comparable, in symptoms and in fact, to acute pancreatitis.

The study of the problem by producing various types of obstruction is so complicated, and the interpretation of the results is so difficult, that we have in our recent work turned to the study of the effects of the poison in the normal animal. This poison can be obtained by precipitating the content of an obstructed loop in alcohol, and can be further purified to some extent. When a fatal dose is injected intravenously into a normal animal, a typical picture follows, corresponding to that in an animal with an actual obstruction, and the autopsy findings are constant and typical. Now, the intestinal content of this animal, with no obstruction, with nothing whatever done to its intestinal tract, contains the same poison. It can hardly be that this toxin is the actual injected dose, for the great dilution in the fluids of the entire body and the loss incident to the crude methods of collecting and recovering rule out such a possibility. We can only conclude that the toxin itself creates conditions favorable to the formation of still more poison. We have carried this experiment through four consecutive animals, which seems to us to rule out conclusively any possibility that we are dealing with the repeated recovery and transmission of the dose originally injected intravenously.

This experiment immediately rules out a number of the suggested theories. Bacteria, food products, intestinal putrefaction, interference with blood supply, necrosis of the mucous membrane, splanchnic "shock," dehydration—in fact, all of the theories which have been advanced, except the one having to do with a disturbance of a normal process, seem to us to go by the board together, in the face of this one experiment. To this experiment we may add another observation: the same toxin appears in the intestine after the removal of both adrenals, there having been no obstruction or operative interference with the intestinal tract. The explanation of this phenomenon is by no means easy; it does seem to us to support strongly our belief that no factor other than some disturbed normal process can be at work.

The experiment with the normal animal and the intravenous injection can be carried out in a relatively short time, with the animal attached to recording apparatus. Cannulae may be placed in the different portions of the intestine, and the content be studied separately. In this way we find that the excretion of poison is greater in the duodenum, but not limited thereto; that it appears before the characteristic hemorrhage into the intestine has occurred.

We arrive then, by a different line of experiment, to the same conclusion as that reached by Whipple and his coworkers: that the cause of death in high obstruction is a poison which is formed in the cells of the mucous membrane of the small intestine, more in the upper small intestine than in the lower, which passes in two directions from these cells—into the lumen of the intestine, where it does no further harm, and into the lymph and blood streams, from which the toxic effect is exerted upon the body.

Now, if this toxin in the gut can do no further harm, how can we explain the life-saving action of the stomach pump, for we cannot get away from the clinical fact that gastric lavage is the most important thing to do until operation can relieve the obstruction? The explanation must be that by removing the toxin already excreted into the gut, we create conditions favorable to the excretion of still more toxin into the gut; the greater the amount thrown out into the bowel, the less the amount to be absorbed into the body.

And therefore, we conclude, do not paralyze peristalsis with morphin, but give the intestine every chance to empty itself back into the stomach. Further, give water by the way of intravenous saline. The appearance of the large bowel in these experiments leads to the conclusion that toxin is also being excreted into it, and you cannot, therefore, rely upon it as an absorbing path. Give water so that there shall be something in the body with which to wash the product of the mucosa into the bowel. The finding of the toxin after adrenalectomy leads us also to suggest the addition of adrenalin to the saline.

Now if our conclusion is correct that the presence of poison in the blood creates conditions under which more toxin is actually created, the mere release of the obstruction may not be enough. Keep up the good work after the operation by intravenous saline. The operation of choice is the one which will permit the most thorough drainage of the bowel, both above and below the obstruction.

II. THE EFFECT OF RADIUM UPON NORMAL NERVOUS TISSUE

At the recent session of the American College of Surgeons in Philadelphia, Dr. Deaver made some remarks concerning radium, which were carried into the daily press and have given cause for an enormous amount of discussion, mostly adversely critical. It matters little whether Dr. Deaver actually said what the reporters said he did, for it is high time that the subject be frankly discussed. What he actually said was:

"Men of experience have seen method after method heralded as a panacea, lauded to the skies, only to fall in disuse and be consigned to a well-deserved oblivion because it has failed to stand the acid test of experience. I hesitate to express my fear that this may prove to be the ultimate fate of radium treatment for cancer; for I should greatly regret to see our fervent hopes rudely shattered. But at least I feel justified in sounding a note of warning against too great expectations, for we have already found that it falls far short of being a universal cure and, indeed, in many situations where we most need help, it has proved sadly lacking."

(Old Methods Versus New in Surgical Diagnosis. President's address before the A. C. S., October 24, 1921. Surgery, Gynecology and Obstetrics, XXXIII, 1921, 605.)

It has been said that Dr. Deaver had no right to take away from the poor, unfortunate victims of cancer any last ray of hope, any faith which might lead to but transient palliation. Quite true; but we have still less right to lead early cases into this hopeless class. The warfare waged by medicine must look after the living, not after the dead.

The problem will only be finally settled when we know just how radium acts. Like so many problems of medicine, practice is ahead of the theory; the necessities of practice often force matters too swiftly, and when we find out all of the truth, we can often look backward and see that we have hoped for more than was possible, have failed to grasp opportunities which were waiting to be seized.

What do we know of the action of radium? How does it act upon the cells? What bearing has this knowledge upon our everyday practice?

Our work with radium began with the request of Dr. Frazier to study experimentally the effect of radium upon the normal tissue of the brain and cord, that there might be more direct information as to the procedure in treating brain tumors. The information gained has governed the actual practice in this field, and has led us still farther into the consideration of the general problem of the action of radium upon the normal cells of the brain and cord.

A more extensive literature has already grown up around the subject than one would expect. The first paper we have found, published in 1903, brings out one point—the tissues of young animals are more susceptible to radiation than are the cells of the same tissues of older animals. This point has been confirmed in later work and extended to the demonstration that the younger cells of the adult body are apparently more susceptible than the older cells; hence the susceptibility of tissues characterized by the presence of young cells—the testicle and ovary and tumor cells.

It was also found very early in the history of the study that the endothelial cells of the blood-vessels are very susceptible to radiation, with the result that hemorrhages into the exposed tissues are early and characteristic findings, with a later thickening and proliferation of these cells.

The effect upon the cells seems to be a primary injury to the nucleus. The work of O. Hertwig, the embryologist, showed that spermatozoa exposed to the action of radium were still able to penetrate the ovum and start the process of cell division; but the nucleus of the spermatozoön did not then take part in the further processes of cell division, as it normally does—the egg developed parthogenetically. I believe Dr. William Mayo has expressed a similar idea in saying that cancer cells exposed to radiation are "made sick."

We found that exposures up to a certain dose, 1150 milligram hours, caused more or less destruction of tissue, but the animals all lived and did not show any particularly noteworthy symptoms. The extent of tissue destruction depends upon the time which elapsed between exposure and autopsy. The same dose after three or four weeks shows a much smaller area of destruction than after months, showing apparently, that the cells in a considerable area are "made sick," to die in the course of time.

Now all the dogs with larger doses died, except one in which a possible error of dosage may have occurred. The time of death is so regularly dependent upon the dosage that it may be accurately predicted and charted as a straight line. These animals live without any particular symptoms until some time before death, when they suddenly become ill with general symptoms, become comatose and fail rapidly.

The autopsy does not show a sufficiently extensive local injury to explain the death, nor indeed, are there any symptoms indicative of local disturbance. In fact, there is much less local injury than seen a long time after small and nonfatal doses. We have found, however, signs of extensive general disturbance in the brain. The entire exposed half of the brain is edematous, and this edema may amount to over 40% of the net weight of the exposed side.

Is it this edema which causes the fatal outcome? We think not, for the most extensive edema occurred in the dog which should have died in about eight days (unless something was wrong with our dosage) but which showed no symptoms after four weeks. For an explanation we must turn to the consideration of the condition known as x-ray or radium toxemia, a study which extends over a good deal of literature, and which can be resolved into three theories.

The oldest theory explains the effect of radiation upon cells, and particularly upon young cells rich in lecithin, by the breaking down of the lecithin under the influence of the radiation and the production of the toxic products of lecithin, cholin and possibly neurin. This theory offers an explanation of the general toxic effects seen, and is supported by the fact that injections of cholin reproduce many of the effects of the x-ray—the effect upon the spermatogenic cells, the production of fetal cataracts, the sensitization of the skin to a subsequent exposure to the x-ray, and the general gastro-intestinal symptoms described after the clinical use of the x-ray.

A second theory explains the effect of radiation as upon the chromatin of the cell nuclei. This theory does not alone explain the general effects. A third theory sees a stimulation of the self-digestion of the cells, or autolysis. In our opinion all these theories can be readily combined in the following hypothesis.

The first effect of the radiation is upon the nuclei of the cells. This may be severe enough to cause the death of the cells, but without the destruction of the ferments which we know to be present in all cells. These ferments attack the substrata of the cell; and if the cell contains chiefly protein the toxic products of protein breakdown are set free, and we have a condition comparable to the condition in acute pancreatitis or in high obstruction, as I have just described in the remarks upon the subject of high obstruction. If the cells contain lipoid compounds, such as lecithin, the toxic products derived from the breaking down of this group may be set free, as we believe has occurred in our work with radiation of the tissues of the brain.

It would seem, then, that we have in radium a therapeutic agent of limited specificity. It prefers, if one may express it that way, the younger cells of a tumor, but it is not very particular and will destroy older cells in its path. Too large doses can produce very serious, and even fatal, effects. The usefulness of radium depends, therefore, upon the accessibility of the cells it is to destroy. This accessibility will be determined by the relation to the surface, and by the size of the growth.

Our own conclusions, based on these experiments, is that we should not place our confidence in the use of radium alone. No operable condition should be entrusted to radium alone. All removable cells should be removed with the knife or the cautery, leaving to radium the task of reaching the small masses of cells in the metastases. In other words, operation plus radium; never, in any possible case radium without operation. We must in our practice work constantly against the danger of adding to the numbers of the hopeless cases by permitting a deceiving trust in radium alone.

III. THE FUNCTION OF THE GALL-BLADDER

The third study of which I wished to tell you to-day concerns the function of the gall-bladder. This evil little viscus nestling beneath every man's belt, seems to cause trouble and discussion out of all proportion to its size, and certainly beyond all proportion to its function, since it seems to be not at all necessary to the human organism and certain species of animals do not possess gall-bladders.

What is it for? Opinion seems to have varied, through all the years through which we have been able to follow the problem in the literature, from the one extreme that it is a vestigial organ, with no usefulness to modern housekeeping, and should therefore be removed whenever possible, to the view that it must be of some account—though no one has offered a plausible suggestion as to the nature of this usefulness—and therefore it should be respected, gently treated and preserved wherever possible.

The most common opinion is that the gall-bladder is a storehouse for the bile which is excreted during the less active periods of liver function, that is, between the active periods of digestion. The liver, unlike the pancreas, for example, secretes continuously, but in animals possessing a gall-bladder bile flows into the intestine only during the periods of active digestion. It seems natural, then, to suspect that the gall-bladder is a device to store this bile which is not poured into the intestine.

This idea seems, at first sight, hardly tenable on the basis of the quantitative relation. The liver is supposed to secrete 1,000 to 1,500 c.cm. of bile per day, and the gall-bladder holds 50 c.cm. Some support can be given this idea, however, by the fact that the gall-bladder inspissates or concentrates the bile—perhaps one of the oldest known facts about the organ—so that gall-bladder bile is about ten times as concentrated as liver bile. This would mean, then, that the 50 c.cm. contained in the gall-bladder really represents 500 c.cm. of liver bile, and on this basis the value of the little organ as a storehouse, or perhaps better an overflow chamber, assumes more real proportions.

I say overflow chamber instead of storehouse, for if it be a storehouse there should be some mechanism for emptying it as needed. We hear a great deal about the contractions of the gall-bladder. These contractions were studied by Bainbridge and Dale, who found that such contractions do exist; but a glance at their tracings will show that these contractions are only the periodic movements common to smooth muscle, and can have no power to empty the organ. The force of these contractions was measured by Freese, who found that "the maximum force of contraction exerted by the gall-bladder does not exceed materially the maximum secretion pressure of the bile." Indeed, the musculature is poorly developed. A further fact which was pointed out to me by Dr. S. P. Reimann, is that there has never been reported a condition of hypertrophy of the muscular coat of the gall-bladder, which one would expect to find in the not uncommon stenosis of the cystic duct. Furthermore, in examining hundreds of animals at all stages of digestion, we have never found the gall-bladder in but one condition—just full.

The only mechanism we can find for emptying the gall-bladder is the pressure of the adjacent organs, with the possible slight negative pressure which might be created in the intramural segment of the common duct as a wave of peristalsis passes over this portion of the intestine.

While studying the gall-bladder, we became impressed with the development of the lymphatics of the organ. It has been stated that the gall-bladder is poor in lymphatics, but we find no support for such a statement. In fact, the organ is supplied with a lymph system out of all proportion to the amount of tissue contained in the wall of the organ. During the process of concentration the water of the bile, at least, must go somewhere. It can only go into either the veins or the lymphatics, and the development of the lymphatics is so extreme that we are led to believe that the concentration of the bile takes place by means of the action of the lymphatics. If we place suitable solutions within the gall-bladder they can be detected in the lymph, obtained by inserting capillary pipettes into the lymph vessels, in a very short space of time—in fact, as quickly as one can collect lymph after injecting the solution into the interior of the gall-bladder.

Experiments now in progress further indicate that reactions for bile can be obtained in lymph collected from the lymph channels of the gall-bladder.

The demonstration of the extent of the lymphatic apparatus of the gall-bladder and the speed with which substances pass from the gall-bladder into the lymphatics, has made clear to me the directness of the relation existing between other intraperitoneal infections and cholecystitis. As I see the process now, organisms from a chronic appendix, for instance, pass into the portal blood stream. They are filtered out of the blood by the liver, and thrown into the bile. Were it not for the concentrating function of the gall-bladder and the necessary direct relation to the lymphatics, these organisms would pass out through the comomn duct to the interior of the intestine, which is, strictly speaking, outside of the body. But instead they enter the gall-bladder and pass with the stream into the lymphatics, where they start an inflammation. Every infection of the body, except a pyemia, is a lymphangiitis.

From the lymphangiitis of the wall of the gall-bladder, organisms pass down to the lymphatics of the head of the pancreas and there set up conditions which result in a chronic pancreatitis.

If you should ask me what I think of the value of the duodenal bucket in the diagnosis of gall-bladder conditions, I will leave you to deduce my opinion from the statement that we are at present working on the hypothesis, developed from a consideration of the facts and experiments I have just described, that what goes into the gall-bladder through the cystic duct, never passes out of the gall-bladder through the cystic duct.

These remarks are based upon the work which will appear shortly, as follows:

The Cause of Death in High Intestinal Obstruction: Lt. J. W. Ellis, M. C., U. S. N.—Annals of Surgery.

The Effect of Radium Upon the Normal Tissues of the Brain and Cord of Dogs, with Its Therapeutic Application: Drs. Pendergrass, Hayman, Houser and Rambo (Awarded honorable mention in competition for the Leonard Prize).—Journal of Roentgenology.

Studies of the Function of the Gall-bladder: Drs. Harer, Hargis and VanMeter.—Surgery, Gynecology and Obstetrics.

PITTSBURGH ACADEMY OF MEDICINE ABSTRACTS

THROMBO-ANGIITIS OBLITERANS

W. B. HETZEL, M.D.

Thrombo-angiitis obliterans is an inflammatory disease of the larger blood vessels, usually of the lower extremities, but at times of the upper, resulting in thrombus formation with obliteration, characterized by a chronic progressive course leading most often to gangrene.

There are several unexplained facts in relation to the disease which are of interest:

1. Racial Distribution. The condition is practically confined to the Hebrews, and of these the vast majority are Russians. Very few cases have been reported among Gentiles.

2. Sex Distribution. It is a disease of the male. In 200 cases, Buerger found only one case in a woman, and this did not progress far enough to require amputation.

3. Age Incidence. It occurs in young adult life, usually between the ages of 25 to 40. In 100 cases, the average age was 32, although this is believed to be too high because of the slow insidious onset of the disease.

4. Etiology is still undetermined.

The clinical picture is a typical one. The onset is usually insidious, the symptoms first appearing being intermittent claudication, and pain in the foot or leg, brought on by use and alleviated by rest. This is followed by trophic disturbances, a small patch or hemorrhagic bleb leading to a dry gangrene of the tip of a toe accompanied by excruciating pain, constant both day and night, so that any relief, even amputation, is begged for. It is also noted that the limb in the pendent position shows a reddening or blush of the toes and more or less of the foot, the so-called "erythromelia"; on the contrary, it shows a blanching on being elevated. Examination reveals absence of pulsation of the dorsalis pedis and posterior tibial arteries, at times the popliteal and even the femoral. These symptoms are all slow and progressive.

A phenomenon which is described as pathognomonic of this disease is a migrating phlebitis or thrombophlebitis of the superficial veins of the extremity, occurring in about 20% of the cases, making its appearance first at one and then at another point.

The diagnosis can usually be made from a careful clinical study. The disease may be confused with certain of the vasomotor nemoses, such as Raynaud's disease. In differentiation, the onset of the ischemia in Raynaud's disease is sudden, affects the upper extremity more frequently than the lower, and usually symmetrical parts, the course is intermittent and the disease is more common in women than in men.

The results of treatment of thrombo-angiitis obliterans have been most discouraging. All authors agree that conservative measures should be instituted at first. These have various objects in view: (1) To enhance the circulation, as baking, Biers hyperemia treatment, diathermy and various postural exercises; (2) to decrease the visocosity of the blood, by subcutaneous injections of Ringer's or saline solution, as advocated by Koga and Meyer, by intravenous injections of sodium citrate solution, as advocated by Steel and Ginsburg; (3) to alter the course of the blood stream by conservative operative procedures, as arteriovenous anastomosis or ligation of the femoral vein. All these methods have given only transient relief or have failed completely. Recently Silbert has reported a method for alleviation of the pain—that of injecting the posterior tibial nerve with alcohol—and has been successful in three cases for a period of six months. However, in time, practically all cases come to the radical treatment of amputation. Occasionally that of a toe will be sufficient, but in a majority of cases amputation of a portion of the leg will be necessary. All tests for estimating the point of amputation are unreliable, and it is advocated that a point at or near the knee be chosen in order to insure viable flaps.

POSSIBILITIES OF CURING CANCER

WILLIAM H. CAMERON, M.D.

When one takes up the study of cancer one is confronted with a multitude of separate and distinct diseases which at the same time interlock clinically in a most confusing way.

In the light of our present knowledge it is, then, unreasonable to expect a common cause for all varieties, and it is certainly not logical to say that this or that therapeutic agent is or is not a success or failure in cancer control, unless it is distinctly understood just what type of cancer is under consideration. It has been stated by some physicians that radium, for instance, will cure cancer. This statement is correct as far as it goes, but it is an overstatement of fact, for the statement can refer only to certain types of cancer.

Other physicians in authority have stated that radium will seldom, if ever, cure cancer. This statement is likewise correct as far as it goes; but again, reference is made to certain types, with the inference, however, that its use in all types is condemned.

Before we accept or condemn a therapeutic agent, we must, of course, have given it the all-important clinical test on living human tissue.

The virulence of cancer differs greatly in different types of the disease. This virulence also differs at different stages in the life history of the individual case. Clinical experience suggests that cancer sometimes finds a more or less fertile field; so in the following classification, based on the age of cancer, a potential type is included: Potential cancer, young or beginning cancer, adolescent or borderline cancer, adult or mature cancer, old or terminal cancer.

Generally speaking, a "young cancer" is one which has not invaded the surrounding tissue to a greater extent than from 1/16 to 1/4 of an inch, and which has not involved the near-by glands. It must be said, however, that any cancer involving bone or bone covering, has little, if any "young" stage and is, from the very beginning, dangerously mature.

When cancer is located on the mucous membrane, the "young" state is very short indeed—a matter of a few weeks perhaps—so it is important to investigate any ulcer or break in this membrance that does not heal in a few weeks' time under ordinary hygienic treatments.

Mechanical irritation hastens a "young" cancer towards maturity. Thus a rough tooth, pipe smoking, tobacco or gum chewing, or the ingestion of hot fluids, should be avoided, especially when a break, or a cut, or a crack, or an ulcer is noticed on the tongue, lip, inside of the cheek and similar locations.

As in other forms of living cells, there are in all types of cancer outlaw cases—cases that do not follow the natural law of the type—so that sometimes a cancer may seem to be in the "young" stage, but because of unexpected and unexplainable extensions to other parts of the body, it is in reality, of the terminal type. The outlaw cases account for bad results when a cure might reasonably have been expected, and at present, there seems to be no way to overcome this handicap.

Where the drainage system is not naturally active, we believe the disease should be rayed, then removed, and the base of the wound again rayed. Also, when a tumor is of slow growth, is well organized and seems to thrive within itself, as it were, it seems better to remove the mass when possible and then ray the tissues from which the growth has sprung.

From the above, it is noted that radium is the agent of choice where it is possible to kill cancer cells in situ and where they must be killed with the least amount of damage to the surrounding tissue. Thus, accidental operative implantation and migration of active cells are avoided, for the radiation tends to close lymphatic channels by which the cells migrate.

Better education is bringing patients earlier for treatment. The hope that they may be treated without pain and without mutilation adds materially to the number who report earlier in their disease.

TREATMENT OF BORDER-LINE CANCER:

In this, the adolescent type, the use of radium and x-ray are suggested, not only to control the local lesion, but the possible and altogether probable extension into the glands. At least, dangerous or borderline tissue is not cut or manipulated. Furthermore, the lymphatics and blood vessels, instead of being opened, are blocked. By avoiding extensive dissection of tissue, hemorrhage is avoided as well as prolonged anesthesia and surgical shock—factors which lower the patient's resistance and decrease his fighting ability. In other words, the immunity the patient may have established is preserved. Cancer immunity is a matter little understood at present, but that it does exist is frequently demonstrated to one who frequently sees cancer patients.

TREATMENT OF ADULT OR MATURE CANCER:

In this group, radium is used to remove or control the local symptoms, with the hope, also, that thorough-going radiation from the x-ray and radium will kill the near cancer cells, sicken the more acute ones, and encapsulate the most distant ones. That this is actually accomplished is demonstrated by the large number of so-called inoperable cases that live from one to ten years after the radiation form of treatment.

TREATMENT OF OLD OR TERMINAL CANCER:

In this type all forms of treatment that will add to the discomfort of the patient are condemned. In some cases, however, palliative measures may be instituted to make the last days of the patient's life more tolerable.

CANCER OF THE BREAST:

Cancer of the breast is a disease apart. It has its own special problems and its own special pathology—the pathology that is encountered when cancer originally develops in an active gland.

The breast, because of its anatomical location, permits the removal of an enormous amount of tissue without disturbing vital function. Consequently the best form of treatment would seem, according to our present knowledge, to be raying with radium and the x-ray (in order to block off the lymphatics), then removing completely the entire gland and its drainage system, and in ten days or two weeks, again raying the entire region—this latter radiation to kill, if possible, any cancer involvement that may have been overlooked at the time of operation.

In conclusion, it may be said that a thorough knowledge of the various forms of cancer, plus skill in surgery, expertness in the use of the diffuse radiations from the x-ray and wise judgment in the employment of the powerful concentrated rays from radium, are the present requisites for cancer control.

REPORT OF A CASE OF BRAIN ABSCESS WITH OCULAR MANIFESTATIONS

JAMES K. EVERHART, M.D.

John Lippert, aged 9 years, of Toronto, Ohio, was admitted to the St. Francis Hospital, October 9, 1922.

The chief complaint was a painful and swollen left eye. About three weeks previous to his admission, he was struck over the left eye with a stone thrown by a companion while at play. There was no external evidence of injury, such as a contusion or a laceration. The usual acute manifestations were present, but no particular attention was paid to his injury until about the third day when the parents noted that eyeball was beginning to protrude and the child complained of severe discomfort. This condition persisted in spite of treatment and obtained upon admission. There were no convulsions nor lapses in consciousness.

Physical examination revealed a rather poorly nourished male child with an unusual facial picture. The left eyeball protruded markedly from the orbit, contrasting sharply with the right, which was normal. Movements of the eyeball were limited in all directions. The pupil was moderately dilated and reacted sluggishly to light. There was some congestion of the conjunctiva. Routine physical examination for possible cerebral condition revealed nothing of note, except slight resistance in an attempt to do a Kernig. There was no stiffness in the neck. The condition was thought to be a hemorrhage into the orbit, causing an exopthalmus. On admission temperature was 101, pulse 100, respirations 28, W.B.C. count 9,780 and urine negative.

On the night of October 14th, five days after admission, during which time there was a gradual reduction in exophthalmus, the child had a series of short convulsions involving principally the left arm. According to the description furnished, "there were at least fifteen attacks, lasting one-half to one minute, consisting of marked spastic, jerky movements of the left arm, associated with a spastic torticollis of the same side, nystagmus in both eyes, and internal rotation of the right eye, the left eye being fixed in the median line with pupils of both dilated. The lower extremities were apparently involved during the attack. During the attack there were also fine muscular tremors in the extrinsic muscles of the right eye and rythmic contractions of the masseters. There was complete loss of consciousness." A lumbar puncture was done at this time, October 15th, which showed clear fluid under pressure. About 15 c.c. were withdrawn, with pressure still above normal. Following this, convulsions were repeated, involving the lower extremities, and were finally controlled by the administration of chloroform. The spinal fluid contained 51 cells with a preponderance of large mononuclears. Culture of this fluid grew Stap. Pyogones Aureus.

The next day and on succeeding days there was little change in his general condition over the days preceding his convulsions. There were no localizing symptoms at any time, nor any clear evidences of meningeal involvement. On October 28th, he complained of frontal headaches and his facial expression was such as to indicate a condition of this sort. He was sluggish mentally and while questions would be answered and asked, they were not consistent with normal mentality. A blood culture and spinal puncture were done. Fluid was clear, under slightly increased pressure, three mononuclear lymphocytes, and no growth was reported from the laboratory. The blood culture was negative.

The patient was seen by a neurologist, who reported that though satisfactory examination was difficult, the condition was one of cerebral irritation, apparently an inflammatory condition plus pressure and suggested an exploration of frontal sinus, holding in mind the likelihood of an abscess of left frontal lobe. This was done and nothing of note obtained in the sinuses, but upon incising the dura, much pus was obtained, a culture of which grew Stap. Pyogenes Aureus.

Following operation, condition became worse and worse, the child dying six days after operation. A lumbar puncture just before death obtained a thick greenish-yellow fluid, which upon culture showed staphylococcus pyogenes aureus.

THE LINGUAL TONSIL

B. M. DICKINSON, M.D.

The lingual tonsil is an unencapsulated mass of lymphoid tissue continuous with the faucial tonsil and extending over the base of the tongue between the epiglottis and the circumvallate papillae to the median raphe, thus forming with its fellow the lower segment of Waldeyer's ring. Structurally and clinically, it resembles the pharyngeal, more than the faucial tonsil. It differs from adenoid tissue only in being inclined to hypertrophy during middle life instead of childhood. It shares in acute inflammations of the lymphoid tissue of this region and is subject to the same diseases. It may be attacked by syphilis, tuberculosis, innocent and malignant growths, lupus and keratosis. Cysts may occur in the form of globular, smooth, tense, yellowish tumors, owing to glandular occlusion. The foramen cæcum may be obstructed and the duct dilate into a cyst. Angioma involving this and surrounding structures is not rare and is not always congenital.

The lingual tonsil has long been known to be subject to chronic inflammation and hypertrophy, the same as other segments of Waldeyer's ring. Its importance in focal infection is not generally appreciated.

The case of A. W., aged 14, and a physician's son, is an illustration. At the age of 11 he was thin, anemic and subject to frequent colds and feverish attacks. His adenoids and tonsils were removed without marked benefit. A subsequent examination showed huge lymphoid masses along the back of the posterior pillars, very large lingual tonsils, and a pale anemic lad with a voice that sounded as if he had a mouthful of mush. The lymphoid masses and lingual tonsils were removed by dissection and a short course of x-ray treatment given the cervical lymphatics. The improvement in his health was marked and came with astonishing quickness.

They should be removed along with the tonsils and adenoids at the first operation. To handle them properly, a general anesthetic is necessary. This, together with a dissecting operation on the faucial tonsil, makes the removal of the lingual tonsils quick and easy. The dissection is simply carried on down under the lingual and the faucial and lingual come away in one piece clear to the median line of the tongue. The removal in some cases in adults is followed by the loss of taste for a period of from a few days to six months. This is probably due to the inevitable interference with the circulation of the circumvallate papillae.

Acute lingual tonsillitis is a common affection often overlooked because overshadowed by a faucial tonsillitis. It is of increasing interest because it occurs alone or in association with acute pharyngitis after the faucial tonsil has been removed by the snare or guillotine method. It is excited by the same causes which are productive of ordinary tonsillitis and may go on to abscess or lingual quinsy. The symptoms are one-sided dysphagia, headache, fever, stiffening of the jaws and dysphonia and dysphagia due to swelling at the root of the tongue which is protruded with great difficulty. The glands below the jaw are swollen and tender and the mirror will show the lingual tonsil swollen and red or later yellow and edematous. Edema of the larynx may cause serious dyspnea.

Frederick B. Utley, Secretary.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

December 11th, 1922

Dr. E. B. Heckel, *President*

EXUDATIVE CHOROIDITIS

Dr. Edward Stieren and Dr. George H. Shuman exhibited the case of G. C., male, age 10, who was referred by family physician on December 9th, 1919, for blindness in left eye. The condition had been discovered one or two days previously by the boy's public school teacher, who noticed him rubbing his left eye. On looking for a reason, she found the unusual appearance of the eye due to the abnormal pupillary reflex. At the first examination, the affected eye was normal in external appearance, except for a gray pupillary reflex; cornea and iris were normal; anterior chamber was of normal depth; aqueous, lens, and anterior vitreous were clear. Vision was nil. The pupil reacted to accommodation and to light consensually. Focal and ophthalmoscopic examination, with the pupil dilated ad maximum with homatropin, showed the vitreous chamber to be filled for about two-thirds of its posterior portion with an evenly distributed, grayish mass, cottony in apparent texture, with the anterior surface concaved as though it conformed to the posterior tunic of the globe. Tension was normal and the same as that of the other eye to palpation. Transillumination gave a very faint, even shadow in all meridians. Personal history, as far as obtainable, was negative except for measles and chicken-pox during the preceding year. Right eye was free from any abnormality and had normal vision.

Diagnosis by Dr. Stieren was exudative choroiditis, with measles as the probable source of the metastasis. Patient reported for observation several times within the succeeding few months and there was no perceptible change in the condition of the eye during that period. He was not seen again until August of the present year, when he came for treatment of what was found to be a mild attack of phlyctenular keratoconjunctivitis. The condition of the left was then found to be as it presents at this time, i. e., a soft, shrunken, degenerated globe, with cataractous lens, atrophied iris, and an odd spot of dense, deep brown pigment, circular and sharply defined, on the anterior capsule of the lens, slightly below center. The right eye is negative and has normal vision.

We believe this to have been one of those rare cases of simple suppurative choroiditis, which Fuchs describes as running so sluggish a course as not to produce any external signs of inflammation and which are so apt to be confounded with neoplasms in the eyeball that they have been designated pseudogliomata. The course of the disease, subsequent to our first period of observation, has made perfectly clear Dr. Stieren's diagnosis of three years ago, but at the time of our first examination differential diagnosis was, of course, a matter of great moment.

MONOCULAR NYSTAGMUS FOLLOWING MUSCLE ADVANCEMENT

Dr. Fred C. Stahlman exhibited the case of Miss A. G., aged 17 years. She was first seen in 1913, when she came for divergent strabismus. Atropin cycloplegia revealed an error of refraction in each eye as follows: O. D., plus 2.75 D. S.; O. S., plus 3.00 D. S., combined with plus 0.25 Cyl. axis 90. In 1913, that is, when patient was eight years old, an advancement operation was done on the left internal rectus muscle. Following this, refraction was found to be: O. D., plus 2.75 D. S., which gave a vision of 6/6; O. S., plus 3.25 D. S., combined with plus 0.25 D. Cyl. axis 90°, which gave vision of 6/9 plus. Two years later, the same correction gave vision of 6/6 (?) in left eye. The eye was fairly straight, but there had developed a slight vertical nystagmus. In 1918, vision in each eye, with correcting lens, was 4/4 (?). One year later, the nystagmus in left eye was more marked and vision had dropped to form perception. There has been no perceptible pathology in the fundi at any time.

Discussion: Dr. McMurray thought the advancement operation had no causal relationship with the nystagmus. Whatever had caused the loss of vision in the left eye had also caused the nystagmus. Dr. Heckel would classify the case as one of nystagmoid movement of the left eye rather than pure nystagmus. Nystagmoid movements following muscle operations are usually transitory. Perhaps the time for their disappearance in this case has not yet come. Such an explanation, however, would not account for the loss of vision in the left eye. Dr. Smith and Dr. Willetts believed the nystagmus to be purely central and to have no relation to the muscle condition.

UNILATERAL EXOPHTHALMUS WITH OPTIC NEURITIS

Dr. S. A. Sturm exhibited the case of L. D., male, aged 62. First seen on November 20, 1922. Stated that eight days previously vision in right eye began to fail and had been gradually getting worse. He had slight pain in the eye. Had always enjoyed good health. "For last thirty years had not known what sickness was."

Ophthalmoscopic examination showed disc elevated about one diopter and marked edema of the retina in places, with retinal hemorrhages scattered over the fundus. Vision reduced to form perception. Tension normal. Left eye was negative and had normal vision. Systemic study by family physician showed a 4-plus blood Wassermann. Urine normal. Blood pressure normal. Two intravenous injections of salvarsan were given.

This date, fundus picture is about the same, but disc is less elevated. Fields are practically obliterated. With exophthalmometer, right eye is about 2 mm. more prominent than the left.

Discussion: Dr. Stahlman did not think the condition luetic because it is monocular. Dr. McMurray thought a more complete study necessary before the etiology and diagnosis could be established. He suggested x-ray examination of the head and a fuller report on the blood chemistry. Dr. Meanor thought that hot baths, mercury and iodids would be more serviceable therapeutic measures in this condition than salvarsan. Dr. Weimer suggested the possibility of a gumma in the orbit. Dr. Heckel stated that a gumma in that region would be rare and thought the cause of the condition to be an obstruction at the apex of the orbit more dense and resistant than a gumma would be.

CALCAREOUS DEGENERATION OF CORNEA

Dr. Adolph Krebs exhibited the case of G. T., girl of 12, a pupil at the Western Pennsylvania School for the Blind. First seen April, 1910. Her eyes had become sore seven days after birth; there had been much pus. Was treated by family physician until ulcers formed and then by a specialist. The eyes recovered from the inflammation in about three months. The right eye was blind and shrunken, but quiet and free from discomfort. The left eye was normal in size and had light and a certain amount of form perception. The cornea was opaque, normal in size, but staphylomatous except for a peripheral rim two millimeters wide. The eye often became sore (bloodshot) and painful.

She was next seen six years later, when the condition of the right eye was unchanged. The left cornea was more staphylomatous, and a calcareous shell about five millimeters in diameter covered its apex. There was much pain and lacrimation. Sight was now only light perception in the temporal fields. The shell was removed, leaving a denuded surface that healed within a few days (Specimen exhibited). Several small calcareous particles have formed from time to time since, and the eye has had rather frequent attacks of pain and inflammation.

As the eye no longer had any light perception and as its presence causes enough discomfort to prevent patient from following some useful occupation, the question of enucleation has been considered.

In discussion, the consensus of opinion was in favor of enucleation.

George H. Shuman, M.D., Secretary.

STATE DEPARTMENT OF HEALTH HARRISBURG, PA.

Doctor McCreary, in charge of diphtheria control, reports for the State Department of Health:

There were in Pennsylvania during the year 1922, 16,617 cases of diphtheria; a reduction of approximately 20% from the reports of the year 1921, when there were 20,794 cases. We feel that much of the improvement in the morbidity report of this highly transmissible disease is due to the intensive campaign waged against it by the State Department of Health.

County medical directors, boards of health, health officers, nurses, and civic organizations have awakened to the fact that diphtheria can be controlled. Those in charge of the special work being done against diphtheria appreciate to the fullest extent the help that has been secured from all.

The physicians of the state have been especially helpful in sending data upon which to base a comprehensive study of causes of failure to control both the morbidity and mortality.

During the year just closed, a study was made of the circumstances surrounding all deaths from diphtheria. Some of the facts brought out in this study were:

1. A criminally long average delay on the part of the parents in securing medical aid—4.7 days from the onset of the disease.

2. Failure to immunize contacts, an average of but one person to each case having been given immunizing doses of antitoxin.

3. Too much dependence upon the laboratory to make the diagnosis.

Lessons to be learned:

1. Every case of sore throat should have a doctor see it at once.

2. Every child in contact with a diphtheria case should be given 1,000 units of antitoxin without delay.

3. Every case of sore throat or croup should be treated as diphtheria until laboratory proves it otherwise.

COMMUNICATIONS

To the Editor of The Pennsylvania Medical Journal, Harrisburg, Pa.

Dear Sir: I have been stirred up by the article, "Why Dad don't want me to be a Doctor," and others of similar vein encountered at various times and places, to indite the attached.

I cannot refrain from being irritated by the medico who intraspectively condoles too much with himself upon his hard lot. He either ought to be cheered up by a slap on the back or a jolt in the jaw. I have, therefore, tried to give him a little of each, without driving him to suicidal intentions.

THE ALCHEMIST OR THE FOOL? WHICH?

> "Seeking gold, the alchemist died poor;
> The fool found plenty under an old door."
> —*Saadi.*

Resembling Saadi's alchemist, there are many in the medical profession, who after a lifetime of devotion to the art, have no estate to leave, and it is becoming quite the fashion for the materially disappointed ones to air their lamentations and grievances in the medical press in a more less dignified manner. One of the least dignified attitudes can be tersely expressed thus: "I'll never raise my son to be a doctor," or, vice versa, by way of son, "Dad don't want me to be a doctor. It don't pay." How like the popular slacker slogan of recent war times, "I did not raise my boy to be a soldier," or that even more disgraceful one, "It is better to be a live coward than a dead hero."

Because the lamenter did not stumble, like Saadi's fool, upon a pot of gold during his professional meanderings, he holds lightly a vocation in which, like a true alchemist, he should plan and work, not for some gold for himself, but toward the golden goal that will benefit humanity in its entirety. Not the lack of gold, merely, kept the alchemist poor. He could likely have attained all ordinarily desired had he attached himself as a slave or sycophant to the entourage of a Tamerlane or Mahmoud, of Ghazni. No, he chose the nobler way, the manly struggle against great obstacles to work out honestly and freely his great idea, with the ardor and devotion inseparable from the artist in love with his work. It is the misfortune of all worthy pursuits that many prepare themselves to enter them for the main reason: "There is money in it." There are too many miniature Col. Mulberry Sellers' followers with "millions-in-it" ideas, and usually about as unsuccessful in every way as Clemens' humorous character, who seldom "have a heart for any fate."

Any idea of enrichment should be considered merely incidental to the central idea of making out of one's self a superior artisan—to be a good alchemist, or a better alchemist, or the best alchemist; not a lucky fool, a luckier fool, or the luckiest fool. And there are and always have been lucky fools in medicine as elsewhere, and unlucky fools also. But the unlucky fool-proof physician courageously keeps up the battle; the slings and arrows of fortune do not retard his determined soul on his and humanity's joint march, and in the darkest moments when "all is lost but honor" does not break down into lamentations over his sad plight. No, the battle rouses up within him resources hitherto dormant; he fights better than ever with his back to the wall. Newly armored, with new resources, disease and death retreat from his therapeutic scimitar, whether in the palace of a steel Tamerlane or a Wall Street Mahmoud, or in some sunless frame atrocity in the neglected quarter of a prosperous metropolis of alleged high sanitary repute.

Blessed be the man who, entering medicine with thoughts of an easily obtained livelihood is early disillusioned, burying his enchanting illusion in a life of service. Happy will he be whether material prosperity attends him or not. He will not be the one to advise the young man carrying the mental banner of "Excelsior," "Try not the pass!" Nor will he prove the medical slacker, weakly willing to desert a profession that does not pay as well as fancied for a less worthy calling that cannot bestow upon any superior man the equivalent moral or mental satisfaction.

Many years ago a young man came to a trans-Allegheny metropolis to practice law. One discouraging year sufficed to make him retire. After a year's absence, he returned to law and to the same quarter in the same city. His name became known nationally and internationally as one of the great lawyers of the time. Perhaps it would pay some of the discouraged in our profession to retire a year or so and in the calm reflection incident to such absence find for themselves a clearer perspective, enabling them to resume their vocation later with a new mind and vigor, leading on to a well-balanced medical career.

The applause and gratitude of the multitude has always been evanescent, ephemeral. Nordan has aptly said: "Only a small group of enlightened minds is able to judge a personality by its inherent qualities." Heed the dictum of the great Florentine, "Sequi il tuo corso, e lascia dir le genti," or the noble lines of Philemon:

> "His be the praise who, looking down with scorn
> Upon the false judgment of the partial herd,
> Consults his own clear heart and boldly dares
> *To be, not to be thought* an honest man."

And though you may be able to cheat history itself into the belief that you have been a great physician or surgeon, yet if you have not labored honestly and have permitted your skill to depend upon the whim of the lucre distributor, you will have while you live the humiliating feeling within you that you are far from being a great man in a great profession. "The applause of the listening senate to command" is meaningless and unsatisfying to your better thoughts.

The young man ambitious to enter medicine should be frankly told that it is a field only for the worthy, the courageous, the persistent, and if he has the true spirit coupled with the requisite ability, he should be encouraged to enter where he will prove creditable rather than saluted with a depreciatory: "Keep out. There's no money in it." Too much like: "Lasciate ogni speranza, voi ch'entrate." Nevertheless, Virgil and Dante entered. H. P. Ashe, M.D.

1304 Colwell St., Pittsburgh.

To the Editor of The Pennsylvania Medical Journal, Harrisburg, Pa.

Dear Sir: The work of the United States Veterans' Bureau in the United States is divided into districts and subdistricts. The Harrisburg Subdistrict Office has charge of ten counties of the state. These comprise Dauphin, Perry, Cumberland, Juniata, Franklin, Lebanon, Lancaster, York, Adams and Fulton counties.

Each Subdistrict Office is equipped with a Group Medical Clinic, where cases may be studied thoroughly from a scientific standpoint and where justice may be rendered to the patient as well as the government. In these clinics patients who have a connected war service disability are cared for both in the way of examinations and necessary medical treatment.

The clinic of the Harrisburg Subdistrict Office has the following physicians associated with it: Dr. Frank F. D. Reckord, Physician in Charge; Dr. William E. Wright, Attending Neuropsychiatric Specialist; Dr. Harvey F. Smith, Consulting Surgeon; Dr. Carson

Coover, Orthopedic Specialist; Dr. J. W. MacMullen, Chest Specialist; Dr. George L. Laverty, Medical Examiner; Dr. A. J. Griest, Medical Examiner; Dr. A. Z. Ritzman, Roentgenologist; Dr. Lester B. Bradford, Ear, Nose and Throat Specialist; Dr. Merle V. Hazen, Eye Specialist; Dr. John H. Fager, Jr., Urologist; Dr. George R. Moffitt, Bacteriologist; Dr. J. M. Peters, Subdistrict Vocational Medical Officer; Dr. Paul W. Eves, Dentist; Dr. Byron S. Behney, Dental Roentgenologist. There are also physicians appointed in the larger cities to act as Designated Examiners and see that the treatment which is recommended by the staff physicians is followed out in the districts in which the patients live.

During the last eight months of the past year 952 general examinations and 2,648 treatments were furnished by the Medical Section; 158 eye examinations were made and 56 cases treated; 629 ear, nose and throat examinations were made and 1,669 treatments furnished; 323 neuropsychiatric examinations were made and 749 treatments furnished; 837 special chest examinations were made and 583 treatments furnished by the Chest Section; 639 examinations were made in the Orthopedic and Surgical Department and 266 consultation and treatments furnished; 403 cases were examined by x-ray and eight cases treated by same; 543 dental examinations were made, with 209 treatments furnished; 749 laboratory examinations were made by the Laboratory Section; making the total number of examinations 5,233, and treatments 6,189.

The Clinic of the U. S. Veterans' Bureau is located on the fifth and sixth floors of the Yoffee Building, the fifth floor being used for executive purposes, while the sixth floor is utilized by the Group Clinic.

Frank F. D. Reckord, M.D.,
Physician in Charge.

NOTICE

CALL FOR VOLUNTEER PAPERS PITTSBURGH SESSION

The Committee on Scientific Work, at its first meeting at Harrisburg, February 6, 1923, instructed that a call be issued for eleven volunteer papers for the Pittsburgh Session of the Medical Society of the State of Pennsylvania, October 2 to 4, 1923.

(1) The subject and a brief outline of all papers must be furnished the Committee before April 20, 1923.

(2) The time limit for the reading of each paper is ten minutes.

(3) An author wishing stereopticon or projectoscope for the illustration of his paper must ask for same when submitting title and outline of paper.

(4) Titles of papers are to be sent direct to section officers or the Chairman of the Committee on Scientific Work.

(5) The Committee reserves the right to decline any paper not deemed of sufficient merit for the sessions.

Thomas G. Simonton, M.D., *Chairman*,
5321 Fifth Ave., Pittsburgh, Pa.

SUCTION IN THE TREATMENT OF LARYNGEAL DIPHTHERIA

In an effort to avoid intubation, Harry R. Litchfield and Reginald P. Hardman, New York (*Journal A. M. A.*, Feb. 24, 1923), in the past permitted patients to remain dyspneic for hours, sometimes to the point of exhaustion, struggling for air, hoping that they might ultimately expel the membrane, or that the antitoxin might check its rapid formation. At present they employ suction promptly, and as frequently as indicated. The patient is wrapped in a mummy bandage as for intubation, and through a Jackson laryngoscope the membrane and mucus are aspirated by means of a 16 to 18 French silk or metal catheter, which is connected to an aspirating bottle, and in turn connected to an ordinary electric suction pump, capable of producing from 5 to 10 inches of vacuum. From May until the last part of December, 1922, 106 patients with laryngeal diphtheria were admitted to the croup service at Willard Parker Hospital. There were twenty-one mild cases which required no treatment. Twelve patients received applicator treatment. Intubation was performed in eighteen cases. Nine patients received suction and intubation. There were forty-six cases in which suction was used exclusively. The total number of deaths was fourteen, a mortality of 13 + per cent. Of the eighteen patients subjected to intubation, eight died with terminal bronchopneumonia. Three of these were moribund on admission; eight have been discharged cured, and two are still in the hospital, and cannot go out without their tubes for any considerable length of time. Two patients who underwent tracheotomy died. Of the nine patients treated by suction and intubation, two died, and the rest recovered. Both patients had bronchopneumonia on admission. The remaining two deaths occurred in the series in which suction was used exclusively. Both these patients had toxic tracheobronchial diphtheria. They were ill about four days before admission; one had, in addition, a pharyngeal involvement. Suction is especially advocated for cases in which there is a low membrane, which cannot be reached by either intubation tube or tracheotomy.

HEMATURIA AND APPENDICITIS

Many cases of stone in the ureter have been mistaken for acute appendicitis, and appendectomy has been performed; but it is rather rare for appendicitis to be mistaken for stone in the ureter. Such a case is reported, however, by Thomas W. Tormey and Albert R. Tormey, Madison, Wis. (*Journal A. M. A.*, Feb. 17, 1923).

Definition by Dr. O. Pine: A *card*iologist—an *"ace"* of *hearts*.

Blow, March, with mighty winds away
The outworn things of yesterday;
Sweep through the soul, as through the earth;
And bear afar the signs of dearth,
Dead leaves, dead dreams, and blighted hours;
Clear hearts and fields for coming flowers!
Blow, March, with great wings, to make room
For life to bud, and love to bloom!
Take in your flight, old wrongs, regrets—
Give place to hope's new violets!

—*Edith Hope Kinney.*

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The Society does not hold itself responsible for opinions expressed in original papers, discussions, communications or advertisements.

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March, 1923

EDITORIALS

AN OLD FRIEND IN NEW DRESS

With the next issue the Pennsylvania Medical Journal will change its name and the April number will appear under the title of the *Atlantic Medical Journal.*

This change was brought about by the union of the Pennsylvania Medical Journal and the *Delaware State Medical Journal,* thus extending the field of both Journals, with the hope that their usefulness will be increased to the medical profession of both states, as well as to other surrounding states.

This consolidation has many advantages to recommend it. None of the old policies will be abandoned; these will simply have a wider field for their application, a field that we hope will constantly expand. We invite the continued interest of our former contributors and the coöperation of new ones. We hope that the profession of Pennsylvania and Delaware will find our columns a worthy outlet for the best of their medical literary productions, and that the men of surrounding states will also take an interest in our work and contribute as they have opportunity.

We want our readers to feel that the *Atlantic Medical Journal* is *their* Journal, and that it is only through their coöperation that it can succeed. We want their help with literary contributions; we want them to help extend the circulation of the Journal by making a greater effort to affiliate with themselves all the eligible nonmembers in the two states; we want them to help support the Journal financially by patronizing the advertisers and by recommending it to other dependable firms that should advertise and do not. But most of all we want them really to *read* the Journal, offering suggestions that they believe will lead to improvement in any department of the Journal work.

With this assistance nothing can prevent the *Atlantic Medical Journal* from taking its place as one of the foremost state medical journals of the country.

CYRUS LEE STEVENS—DOCTOR OF THE OLD SCHOOL

Once more the profession is made poorer by the loss of a true representative of the old school physician. While the life of Weelum MacLure, beloved doctor of the old school described in Ian Maclaren's well-known volume, cannot be compared in detail to the life of Cyrus Lee Stevens, the spirit of the two men was the same.

Dr. Stevens, who graduated from medical school in 1880, lived a most active and energetic life. During his seventeen years of active editorial work in the interest of the medical profession of Pennsylvania he kept abreast of every new movement in medical art and science, with the constant purpose of serving the profession in still greater measure.

Dr. Stevens has passed on; and at the passing of this man we cannot refrain from comparing his life with the records of others of the old school, and thinking of the influence such men as he have had on the progress of medicine. His efforts were ever toward an upward and better trend in medical practice. In life a Christian, in practice one who had sincere sympathy with his patients, and for the progress of the profession a tireless ardor which is hardly found to-day among medical men, his influence in the professional life of the state will be keenly missed.

It is not the purpose of this editorial to eulogize Dr. Stevens more than to say that his life was a living example of practical medicine. The editorial pages of The Pennsylvania Medical Journal are records of his efforts and are a lasting memorial to his life in journalism. His work in the various offices which he has held in organized medicine of the state also stands out preëminently as a milestone for the younger members of the profession.

The doctor of the old school is fast disappearing. Possibly those of the younger generation are not averse to seeing new pages turned in medical history, for there is somewhat of a difference between the medical graduates of twenty-five to thirty years ago, with their limited opportunities, and those who have the privileges afforded in medicine to-day. Yet the human body has changed but little; the fundamentals of medicine are largely the same to-day as they were in 1880. The science of medicine has expanded remarkably; yet it seems sometimes that the graduate of the present day has missed something of the self-reliance, resourcefulness and vision of the older men, those qualities so outstanding in the life and work of Dr. Stevens. The clearsightedness of Dr. Stevens was frequently brought into play in the early work of our State Society, when mature judgment was required to steer the ship of state regarding medical affairs. May the doctors of the old school not entirely disappear, for we still need their help in the work of the medical profession.

One could write a long and exhaustive history of Dr. Stevens' life and yet not bring out any greater thought than the one which was always uppermost in his mind—organized medicine first for the benefit of the profession and of the public, and self last. May his example be emulated by the younger doctors of the new school, and of all schools, who are endeavoring to practice the healing art within the confines of our great country!

PREVENTIVE MEDICINE

To the great war has been ascribed much of the unrest which permeates all classes of society to-day, and which is bringing about so many changes in the practice of various pursuits.

So far as medicine is concerned, however, the change began long before the war. It is not easy to ascribe it to any one cause nor to mark definitely the date of its beginning. Probably the pioneer was Jenner, when he introduced vaccination. Recently the teachings and writings of Richard Cabot have been instrumental in presenting the social viewpoint.

In attempting to analyze the change we may accept prevention as the motif. How far and to what extent its ultimate development may reach, no one can foretell; nor, as Flexner points out, can any one man or any group of men offer any material resistance to it.

Pediatrics, more than any other specialty, gives evidence of the preventive spirit of the times. For example, we note that since the inception of the Pediatric Section of the Medical Society of the State of Pennsylvania, twenty per cent of the papers presented have been on subjects relating to prevention and public health, as opposed to those which deal solely with clinical, diagnostic or therapeutic procedures.

Pediatricians to-day must be prepared to advise and direct the mother, so that the child may thrive to the fullest extent possible and avoid as many of the medical and surgical pitfalls as preventive ingenuity can suggest. The best initial training, therefore, for the prospective pediatrician during the hours of leisure which occur in the first years of his practice, is in one of the so-called health or nutrition clinics, where he can acquire, to the greatest advantage, knowledge of the normal physical signs and appearances and the principles that underlie the maintenance of health. Only a few of the medical schools and hospitals have recognized this truth, but it is safe to predict that the next few years will find a rapidly increasing number of instances where the student and intern will be given the opportunity to develop the health viewpoint, rather than to be trained exclusively for the treatment of the sick. J. C. G.

THE VALUE OF PERIODICAL EXAMINATIONS AS AN AID TO BETTER HEALTH

The problem of health has many perplexities. Heredity, habit, understanding, social intelligence and control are all factors in this problem. Looked at from the standpoint of disease, we note that some diseases are gifts of parents to children; others are private luxuries which the individual may take or let alone as he has the intelligence or will; still others are the achievement of community enterprise or the lack of it.

While diseases may be accidentally acquired, health is a possible goal for the individual or the community. Public health is purchasable. Within limitations, a community can determine its own death rate.

The attainment of this goal is still some distance in the future. Much work must be done before health becomes more contagious than disease. We must escape from many superstitions; we must reëducate our desires and wills; we must acquire a more scientific understanding of all these problems; we must disseminate much protective knowledge broadcast throughout our communities and the world.

The above problems are largely those of the physicians. The people, to be helpful toward better health and longer life, have their part to play toward bringing about a better state of things.

All persons should go to the doctor before they are sick for periodic examinations. In this way disease is prevented or at least taken in time for early and less difficult cure. To learn where one stands in health is as necessary as it is for a business man to know where he stands in business, and it can be done only by frequent examinations.

There is abundant proof that the human body needs a thorough overhauling at stated intervals. It is not for the average person to determine what changes he should make in his diet or habits, if he is striving for better health. A doctor trained in the science of overhauling the human machine is the only one upon whose judgment he can safely rely.

The body is an instrument. Paderewski would never give a concert without knowing perfectly well the condition of the piano upon which he was to perform. One note out of order, and his concert would be ruined and his musical reputation blighted, as well. The human instrument has many strings, and its construction is far more delicate than a piano, yet we attempt hazardous concerts with never an idea of determining the condition of the body.

Every mechanic knows that the machine he employs must be examined at regular intervals. Whether it is a turbine, a motor car or a lawn mower, its owner frequently inspects its condition. Otherwise, how can he expect to get a hundred per cent drawing power? He does not wait until the machine breaks down. He watches over it to prevent it breaking down. If it breaks, he then brings in an expert to put it in order. So with our human machine, the greatest machine of all. In that way only can disease be headed off. It is of the first importance to detect the early stages of disease, to discover conditions leading to apoplexy and Bright's disease and other causes of sudden death that carry off so many of our useful citizens.

A popular health advertising bulletin has as its slogan: "See your doctor at 40." Why only at 40? Why not at 30, and at 20, and in fact at every age?

Thousands of people now have periodic appointments with their doctors. It has become a matter of routine. Dentists have educated their patients in this regard. It is now up to the doctor to follow their good example in encouraging their patients to visit them regularly to determine the exact state of their health. Whether their bodies are in a state of sickness or in health.

School inspection, draft examinations and life insurance companies have done a great deal to remove from people the alarm which comes from learning of the existence of some disease, because of treatment suggested or employed to correct many of the diseases revealed by such examinations.

Periodic examinations by a physician play an important part in educating the public along lines of health. In this respect public education is akin to selling stock in a new enterprise. A salesman has to do a great deal of talking and writing and making any number of personal visits, but once the stock has been sold, the salesman feels sure the work has paid. Public sentiment is a hard thing to arouse, but once aroused it takes comparatively little labor to keep it going. Let every physician put forth every effort to have his patients submit to periodic health examinations. Then will they soon learn that prevention is cheap; that cures are often costly.

J. D. McA.

PRACTICAL METHODS IN DISEASE PREVENTION

Our State Society is about to carry out a program for the prevention of diphtheria under the direction of the new Committee on Public Relations. The time set to put on this program is during the coming month of April. Every physician in the state of Pennsylvania should thoroughly understand the usefulness of toxin-antitoxin and be able to do properly the Schick test. This campaign is for a double purpose—not only to refresh the minds of the medical profession regarding the prevention and treatment of diphtheria, but also to bring to the attention of the public the necessity of immunization and, where infection exists, the early treatment of the case.

From time to time there have been spasmodic efforts made to wage campaigns against certain diseases, and the splendid results achieved by the Society for the Prevention of Tuberculosis and the work of the State and National Cancer Commissions point to the advantage of united effort in the prevention of disease.

The medical profession continually hears the accusation that it is not sufficiently interested in preventive medicine. That, taken as a statement only, is not true because the majority of the profession use every oportunity to inform the laity as to the best means of preventing disease.

In the work which this new committee has undertaken the united support of the medical profession is solicited. Unless those selected to work in the county societies and the individual members of the profession assist in bringing to the people the message of diphtheria and how it can be prevented, the work of this committee will not be as successful as it should be. Make this campaign for 1923 a success by your assistance.

VOICE PRODUCTION AS RELATED TO TREATMENT OF VOCAL DISORDERS

Recently several papers on voice production and the treatment of vocal pathology have come to our notice, which would be amusing if the results of following their advice were not apt to be so serious. We must confess to considerable disappointment when we find physicians (who, if anyone, should be scientific) taking up the same old unscientific squabbles that have been disrupting the vocal teaching profession for years, and what is worse, coming to no more scientific conclusion than those same teachers. The only excuse we can find for the lamentable lack of knowledge of the subject, even on the part of the average laryngologist, is that he has not had the importance of the subject called to his attention.

One of the above-mentioned papers suggests that the physician should never treat singers (and please bear in mind that the same conditions apply to the speaker as to the singer) for disorders of the vocal organs without first hearing them sing. But, we ask you, how can a doctor who has never sung, who has never had any vocal training, decide on a question that takes an ear of the greatest acuteness, and which often puzzles a teacher of years of training and experience? How can he hope to judge as to whether the voice is placed correctly? How can he tell whether the quality is that of a soprano or mezzo, a tenor or baritone? The question simply resolves itself to this: If a man expects to specialize in the treament of the vocal organs he should, along with his medical training, study voice production from both a practical and a scientific viewpoint. And he should not attempt to express himself in medical meetings unless he does have this specialized and highly technical knowledge.

There are a number of elements associated with the function of voice production, and they are *all equally important*. If *one* of these elements fails the voice fails, and so it is not possible to elevate one to a position of importance above the others. Chief among these elements may be mentioned the following:

1. The breathing. The part played by the breath in voice production is the elementary one of causing vibration of the vocal cords. Naturally it is important that just the right quantity of breath be used; because if too much breath is emitted, either the tone will be breathy or the vocal cords will be strained. Therefore, greater difficulty occurs in controlling exhalation than inhalation, although strange to say the most discussed phase of the subject has been as to the proper method of inhaling. It would occur to us that the most correct method of inhaling would be to use the entire lung, rather than to confine oneself to the clavicular, the intercostal or the diaphragmatic method, so-called. Surely this would require the least amount of effort and produce the least amount of strain—and in voice production strain is the one thing we are most anxious to avoid. Be this as it may, the most important point in the breathing is to develop the muscles to retain the breath in the lungs, emitting only the amount necessary to produce the tone desired. And, please note: this action is practically automatic if the singer does not make too much effort.

2. The action of the larynx and vocal cords is too well known to need comment here. One interesting point that is seldom emphasized is that their action is what is termed by physiologists "voluntary action." That is, it is practically automatic, responding to the singer's mental concept. As soon as he begins to think of his larynx, of the muscles or organs concerned with the process of singing, just that soon does the throat stiffen and the greatest enemy of the singer appear—strain.

Another point infrequently mentioned is that the strength of the voice seems to correspond more nearly with the strength of the vocal cords than with the strength of the lungs; for, as pointed out above, everyone has more than enough breath to sustain a tone much louder than the vocal cords could support, the difficulty, in fact, being to restrain it to a point commensurate with the strength of the cords.

But the vibration of the vocal cords is not sufficient to produce the singing voice. A third and most important element is:

3. The resonance. There is no musical instrument to which the voice can be so aptly compared as the pipe organ. The lungs correspond to the wind chest; the diaphragm to the bellows; the vocal cords to the vibrating reed or lip; and the nasal cavities, throat and mouth to the resonance cavities in the pipes, filled with air

that under proper conditions becomes a vibrating column that greatly magnifies the tone. It is these resonance cavities which so largely determine the quality of tone in both pipe organ and voice.

Physicists speak of forced and sympathetic vibration. These may be illustrated by the following: If a tuning fork is caused to vibrate, the sound carries only a short distance (just as the vibration of the vocal cords without the reinforcement of the resonance cavities would carry only a short distance). If the vibrating fork is placed against a table it forces the table to vibrate with it (by means of the contact) and the sound is reinforced. This is called *forced* vibration and is produced at the expense of the first vibrating body. If the vibrating tuning fork is placed in a resonator, and another fork of identically the same pitch (also in a resonator) is placed in the same room, the second fork will pick up the vibration, literally out of the air, and will sound with a force almost as great as that of the first fork. This is called *sympathetic* vibration, and does not steal any strength from the source of the vibration, but rather by the action of its vibration reinforces it, and the two will sound longer and stronger than the first would have alone.

In voice production forced vibration of the resonance cavities is absolutely wrong, causes an unpleasant quality of voice and is very apt to strain the vocal organs. Again, just as with the breath and the vocal cords, the resonance cavities will automatically shape themselves to the proper size and position to produce sympathetic vibration, if we permit them to do so. Unfortunately most of us seem to be afflicted with the idea that in order to sing well we must *do* something, try very hard, so that most untrained singers, and many trained ones, make too much effort in singing. This, combined with an insensitized ear, is the greatest hindrance to a proper use of the resonance cavities and an easy and pleasant production of tone.

4. Probably the most difficult to acquire of all the necessary elements in voice production is a sensitive ear. The training of the ear to recognize fine shades of difference in tone quality and pitch is usually a task of years. And unless the singer has an ideal of correct tone and an ear to recognize it in others and in himself, the task of training him to produce a beautiful voice is hopeless.

5. Of course normal and healthy nerves and brain are a necessity without which the perfect voice cannot be produced.

6. Last of all we mention good general health. There is no function of the body more quickly disturbed by indigestion, by fatigue, by unhappiness or any emotional stress, by any organic or functional pathology of the body or mind, as that of voice production. And what is true of the singer is equally true of the public speaker, for the same principles apply equally to the singing and the speaking voice.

We would suggest, then, that the physician who attempts to treat disorders of the voice inquire first into the condition of the general health of the patient; then into his state of mind; then, if the physician has had any real training in the practical production of the voice, into the matter of disorders caused by wrong methods of training or of singing (and if he has not had this training that he refer the patient to someone who has had it), before making his final diagnosis as to the cause of the trouble.

The voice is the mirror not only of the mind but of the body as well; and vocal troubles may often indeed be but an indication of more deep-seated and serious disorders. M. S. B.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

THE ADVANTAGES OF POSTGRADUATE WORK FROM A BUSINESS VIEWPOINT

The young physician, just entering upon active practice after having completed his college course and hospital internship, usually capitalizes his professional value in financial terms by the sum total of money spent by himself or his guardians during his educational period. In former years this principal was added to by the amount of clinical experience gained in general practice, reading, original thought and investigation, and in attendance upon local, county or state meetings or the American Medical Association. As a rule the physicians who attend the meetings of the American Medical Association are active in their local and state societies. Some, however, do so only as it affords opportunity for themselves or their families to enjoy an outing at lower than the ordinary rates of travel and entertainment.

For many years prior to 1914 scant attention was paid to postgraduate work by scientific bodies, hospitals or institutions in the United States, and not by any of them on a large scale. A few postgraduate, polyclinic or other groups of physicians organized in scattered areas in the larger medical centers of this country, but at no time was their attendance very large, though in many instances their instruction was very good. By far the large majority of physicians desiring to do postgraduate work, particularly along special lines, headed across the Atlantic for Vienna, Munich, Budapest, Berlin, and occasionally London, Paris, or Edinburgh. Due to foreign propaganda, the "ready-made" foreign article of postgraduate instruction was said to be far superior to the "made in America" product, so that our native talents and resources were permitted to lie dormant and unrecognized, or they were developed on only a small scale. The handicap of time, expense and required familiarity with foreign languages naturally had the effect of limiting a large number of men from pursuing postgraduate work who were really desirous of enlarging their medical horizon and knowledge.

During the World War many of the physicians in the government service were given intensive training along special lines with the result that their desire for further knowledge has witnessed a widespread interest in postgraduate instruction. Regardless of the professional advantages which may come to the physician who does postgraduate work, such as familiarity with the latest methods of treatment, instruments of precision and systematic study of cases, the opportunity for attendance upon large scientific meetings and contact with enthusiastic leaders of the medical profession makes for general culture and adds to the monetary value of the postgraduate course.

The men in service were accustomed to being treated medically by physicians who were specially trained in their respective lines and they became familiar with many of the latest methods in medicine which make for scientific accuracy and benefit to the patient, so that they now expect the same qualifications in the physician to whom they apply for relief. The former soldier or sailor is now the young married man of the community and has become the head of a family, so that his desire to secure the best attention for his loved ones naturally attracts his thought to the man who is specially prepared, or who has recently done graduate work, thereby suggesting that the physician, upon his return to practice brings with him from the fountains of learning the best that medicine can produce. Patients are willing to pay well for good service rendered, and the doctor, upon his return to practice, can appropriately command a larger fee than he could otherwise obtain. The time and money spent while doing postgraduate work is the equivalent to adding capital to any business, with the expectation of reaping increased interest and dividend returns upon the capital invested. Aside from the commercial view of the matter, the physician who has done postgraduate work goes back to his community with a feeling of greater confidence in his ability to recognize and treat the sick better because of his increase in medical knowledge.

The doctor in the country who has done special work in gynecology or obstetrics could easily arrange to remodel his office or home so as to afford a few beds for maternity cases and thus be enabled to care for many additional patients without consuming much time by traveling from patient to patient, especially when two or three women fall into active labor at the same time. By having a trained nurse or a woman practically instructed to care for his office and bed patients he will be better enabled to meet the complications that frequently arise in this line of practice. From an economic standpoint, preserving the life of mother and child proportionately contributes to the commonwealth by conserving the lives of future citizens and potential voters.

In this connection, the small community hospital deserves consideration, as many physicians, while doing postgraduate work, learn to appreciate the value of a hospital, even on a small scale, so that with stimulation of the community interest, professional coöperation of their colleagues, and the spread of industrial establishments, financial arrangements could be made to erect a hospital that would soon demonstrate to any doubting Thomas the actual need that had existed in that section for its establishment.

The physician also comes to see how much of the general clinical work that he had previously performed individually could be assigned to an assistant, thus giving him time for reading, study, or seeing a larger number of patients each day. The importance of formulating a card index system of histories will also impress its value on the physician while doing postgraduate work, and this again would tend to relieve him of the burden of trying to remember what treatment had been prescribed or instituted on previous occasions.

The investment in personal health while doing postgraduate work, constitutes not a small factor in the sum total of its value. The matter of regular hours of sleep, of meals, relief of tension in care of patients and the many worries incidental to ordinary life are in abeyance while the doctor is pursuing his graduate course. His body undergoes rejuvenation, he comes in contact with new faces, makes new friends, gets new ideas, and along this and many other lines his time is very enjoyably and profitably spent. He returns to his former field of labor renewed in mind and body, better able to resume work.

A. C. Morgan, M.D.

Philadelphia.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.,
Pittsburgh, Pa.

DR. CYRUS LEE STEVENS

In the death of Dr. Cyrus Lee Stevens of Athens, Secretary for twenty-one years and a former President, the Medical Society of the State of Pennsylvania has lost the greatest single contributor to whatever service to the public the Society may have originated, or whatever advancement in organization it may have made, in the last quarter of a century.

1923 ANNUAL ASSESSMENT

To date, February 20, 1923, the annual assessment of 3,027 members has been received by this office. This total is greatly in advance of the total number received on the same date last year. The remarkable increase, however, is due largely to the efforts of the officers of but a few societies who encourage their members to meet promptly this just obligation.

Your annual assessment to your county medical society was overdue on January 2d of the current year. If not paid in time to be remitted by the officers of your component county society to the Secretary of the State Society on or before March 31st, you become an actual delinquent, and you will be forever deprived of medical defense by the State Society for any action brought against you for malpractice alleged to have occurred between January 1st and the date of payment of your delinquent dues. You unnecessarily and unfairly increase the work of several officers who serve you; you imperil the proper appearance of your name in the annual directory of the State Society; and you interrupt the continuity of your subscription to THE PENNSYLVANIA MEDICAL JOURNAL.

If you have not already discharged this obligation, please remit at once your 1923 dues to the secretary or treasurer of your county medical society.

The percentage of 1923 dues received at this office, February 20th, from certain county medical societies is herewith indicated: Adams, 82%; Allegheny, 52%; Blair, 64%; Bucks, 51%; Butler, 55%; Clarion, 77%; Columbia, 53%; Dauphin, 63%; Delaware, 63%; Franklin, 50%; Juniata, 50%; Lycoming, 67%; Mercer, 77%; Mifflin, 64%; Montgomery, 79%; Montour, 100%; Potter, 63%; Somerset, 52%; Sullivan, 75%; Union, 64%; Washington, 54%; Wyoming, 100%.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to February 17th:

ALLEGHENY: *New Members*—Emanuel B. Friedberg, 438 So. Fairmount Ave.; Thomas R. Kendrick, 2851 Bedford Ave., Pittsburgh. *Resignation*—Frederick Proescher, Sioux City, Ia.; Claude L. Bradford, Pittsburgh. *Removal*—Benjamin B. Handmacher, of Pittsburgh, to Fourteenth and Merchant Sts., Ambridge; Paul G. L. Hoch, from Pittsburgh to 112 Cherry St., Tarentum. *Death*—James J. Dickinson, of Pittsburgh (Jeff. Med. Coll., '13), Feb. 16, aged 35.

BEAVER: *Deaths*—Washington F. Elliott, of Beaver Falls (Jeff. Med. Coll., '87), recently; Walter A. Rose, of Rochester (Univ. of Buffalo, '67), recently.

CHESTER: *Death*—Charles E. Woodward, of West Chester (Univ. of Penna., '74), recently, aged 77.

CRAWFORD: *Transfer*—Charles E. Mullen, of Cambridge Springs, from Allegheny County Society. *Deaths*—Clarence C. Hill, of Meadville (Bellevue Hos. Med. Coll., N. Y., '74), Feb. 5, aged 70; Frederick L. Nisbet, of Meadville (N. Y. Univ. Med. Coll., '87), recently, aged 61.

FAYETTE: *New Member*—W. C. Roller, Brownsville. *Reinstated Member*—John P. La Barre, Uniontown.

LACKAWANNA: *New Members*—Emmett S. Burke, 1102 Marion St.; Paul E. Brown, 829 Linden St.; F. H. Cathrall, 829 Linden St.; Clyde L. Mattas, State Hospital; William A. Stevens, 2103 N. Washington Ave.; Merwyn M. Williams, Bowman Bldg.; C. R. Park, 1610 Academy St.; Dumont F. Elmendorf, 229 Harrison Ave., Scranton; L. Freda, Dunmore; Thomas P. Martin, Carbondale. *Reinstated Members*—Thomas G. Killeen, Connell Bldg.; Joseph E. Ratajski, Fair Bldg., Scranton; William S. Johnson, Carbondale.

LANCASTER: *New Member*—H. F. Wagenseller, Elizabethtown. *Deaths*—John H. Musser, of Lampeter (Jeff. Med. Coll., '66), Jan. 18, aged 78; Samuel H. Heller, of Lancaster (Univ. of Penna., '99), Jan. 21, aged 50.

LEBANON: *Death*—Milton B. Fretz, of Palmyra (Univ. of Penna., '71), recently, aged 73.

LEHIGH: *New Members*—George H. Bloom, 1032 Hamilton Ave.; Lawrence H. Bloom, 1032 Hamilton Ave., Allentown.

LUZERNE: *Removal*—David R. Morgan, from Edwardsville to Roxborough, Philadelphia; Robert O. Koons, from Conyngham to Shickshinny.

LYCOMING: *New Member*—E. Lloyd Rothfuss, Williamsport Hospital, Williamsport. *Resignation*—Robert D. Spencer, Ashland.

MERCER: *Death*—John M. Martin, of Grove City (Bellevue Hos. Med. Coll., N. Y., '74), Feb. 5, aged 75.

MONTOUR: *Removal*—A. Rowland Kirch, from Danville to 121 Parkwood Ave., Williamsport (Lyc. Co.).

MONTGOMERY: *Resignation*—Daniel E. Stedem, of Buffalo, formerly of Narberth; Marianna Taylor, of Boston, formerly of St. Davids (Del. Co.).

NORTHAMPTON: *New Members*—Carl Gaines, 100 N. Seventh St.; Charles H. Boyer, 1102 Northampton St., Easton.

Philadelphia: *Deaths*—Harley J. Butte, of Philadelphia (Univ. of Penna., '00), Jan. 12, aged 53; Samuel B. McDowell, of Philadelphia (Jeff. Med. Coll., '76), Dec. 10, aged 74; Anna R. Osmond, of Philadelphia (Woman's Med. Coll., Phila., '97), Feb. 1, aged 66; Caroline M. Purnell, of Philadelphia (Woman's Med. Coll., Phila., '87), Feb. 3, aged 58; Walter L. Culbertson, of Philadelphia (Maryland Med. Coll., '11), Feb. 3, aged 41; J. Coles Brick, of Philadelphia (Jeff. Med. Coll., '94), Feb. 4, aged 62.

Schuylkill: *Transfer*—Ella R. Summa, of Nanticoke (formerly Ella I. Rynkiewicz, Shenandoah), to Luzerne Co. Society.

Washington: *New Member*—David M. Bell, Canonsburg.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since January 20th. Figures in first column indicate county society numbers; second column, State Society numbers:

1923

Jan.	20	Washington	1–46	1083–1128	$230.00
	22	Mercer	33–34	1129–1130	10.00
		Venango	11	1131	5.00
		Delaware	45–46	1132–1133	10.00
		Mifflin	15–16	1134–1135	10.00
		Dauphin	43–58	1136–1151	80.00
		Montour	15–22	1152–1159	40.00
	23	Somerset	19–22	1160–1163	20.00
		Lehigh	7–26	1164–1183	100.00
	24	Venango	15	1184	5.00
	25	Mercer	35–38	1185–1188	20.00
		Delaware	47–48	1189–1190	10.00
		Allegheny	282–402	1191–1311	605.00
	26	Delaware	49	1312	5.00
		Dauphin	59–73	1313–1327	75.00
	27	Mercer	39–40	1328–1329	10.00
		Lackawanna	161–169	1330–1338	45.00
	29	Franklin	1–15	1339–1353	75.00
		Dauphin	74–79	1354–1359	30.00
		Beaver	12–22, 24–27	1360–1374	75.00
		Clinton	5–10	1375–1380	30.00
		Somerset	23	1381	5.00
	31	Allegheny	403–477	1382–1456	375.00
		Lackawanna	1–3	1457–1459	15.00
		Blair	16–52	1460–1496	185.00
		Montgomery	104–116	1497–1509	65.00
Feb.	1	Delaware	50	1510	5.00
	2	Mercer	41–43	1511–1513	15.00
	3	Butler	15–20	1514–1519	30.00
		Delaware	51	1520	5.00
		Fayette	1–37	1521–1557	185.00
	5	Mercer	44–45	1558–1559	10.00
		Clarion	1–24	1560–1583	120.00
	6	Juniata	6	1584	5.00
		Lycoming	64–67	1585–1588	20.00
		Cumberland	17–20	1589–1592	20.00
		Clinton	11–13	1593–1595	15.00
		Northumberland	10–17	1596–1603	40.00
		Lackawanna	4	1604	5.00
		Dauphin	80–86	1605–1611	35.00
	7	Mercer	46–47	1612–1613	10.00
		Union	11	1614	5.00
		Montour	23–24	1615–1616	10.00
		Lackawanna	5–9	1617–1621	25.00
	9	Mercer	48–52	1622–1626	25.00
		Montgomery	117–126	1627–1636	50.00
		Adams	17–19	1637–1639	15.00
		Lackawanna	10–35	1640–1665	105.00
		Dauphin	87–91	1666–1670	25.00
		Lancaster	1–32	1671–1702	160.00
		Venango	16	1703	5.00
		Somerset	24	1704	5.00
		Cambria	14–53	1705–1714	50.00
	10	Sullivan	1–6	1715–1720	30.00
		Erie	23–41	1721–1739	95.00
		Delaware	52–55	1740–1743	20.00
	12	Dauphin	92–94	1744–1746	15.00
		Lackawanna	36–43	1747–1754	40.00
		Mercer	53–55	1755–1757	15.00
		McKean	1–18	1758–1775	90.00
		Northampton	1–65	1776–1840	325.00
	13	Blair	53–57	1841–1845	25.00
		Delaware	56–57	1846–1847	10.00
	14	Lawrence	1–21	1848–1868	105.00
		Northumberland	18–28	1869–1879	55.00
	15	Somerset	25	1880	5.00
		Mercer	56–58	1881–1883	15.00
		Butler	21–29	1884–1892	45.00
		Franklin	16–26	1893–1903	55.00
		Erie	42–68	1904–1930	135.00
	16	Washington	47–67	1931–1951	105.00
		Clearfield	22–30	1952–1960	45.00
		Delaware	58	1961	5.00
		Venango	17	1962	5.00
		Lackawanna	44–61, 63–67, 69	1963–1986	120.00
	17	Lehigh	27–48	1987–2008	110.00
		Crawford	18–27	2009–2018	50.00
		Lycoming	68–76	2019–2027	45.00
		Philadelphia	1–1000	2028–3027	5,000.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
212 N. Third St., Harrisburg

LEGISLATION

WATCH THIS DEPARTMENT

In continuing our discussion of the bills which have been brought to the attention of the Legislature since the February issue of the Journal we find that a bill known as House Bill No. 255, introduced by Representative Steedle, is a supplement to amend the Act approved the third day of June, 1911, creating the Bureau of Medical Education and Licensure. This bill calls for the establishment of a department in this Bureau for the purpose of enforcing the laws now on the statute books relative to the practice of medicine and its branches that are under the control of the Bureau of Medical Education and Licensure, and especially for the purpose of locating and convicting violators of this act. This gives the Bureau the power to employ inspectors, interpreters, chemists, attorneys, stenographers and assistants. This division shall obtain such evidence as may be necessary to prosecute through its attorneys violators of this act or any provisions thereof. House Bill No. 256 calls for an appropriation of $30,000 for two years in order to carry out the provisions of the act.

In view of the fact that up to the present time there is no bill in the Legislature combining all boards and bureaus in the Department of Public Instruction, which would come under the term of One Board Bill, this amendment should be brought to the attention of the members of the House and Senate and their vote asked in favor of the passage of this measure.

A bill in which the profession should be somewhat interested is House Bill No. 192, which affects more particularly the practice of pharmacy, in that it provides for the examination and licensure of assistant pharmacists and fixing fees. The amendment says that "any person who has had not less than ten years' practical experience, as defined and provided in Section Four of this act, and shall have been engaged in the military or naval forces of the United States for a period of at least one year shall be registered as an assistant pharmacist without examination upon the payment of a registration fee of $25.00 and shall be granted the certificate of competency provided for in this act." We are only interested in so far as we have qualified pharmacists and trust that if consultation is requested the physicians will be informed as to the merits of the act.

Public health officials will be interested in House Bill No. 295, which provides that a burial permit issued at the place of death shall be valid throughout the commonwealth. This is a measure which was advocated twenty-five years ago, and we are wondering whether it will finally pass.

House Bill No. 293, introduced by Representative Golder of Philadelphia, is an amendment to Section Two of the Act of April 20, 1922, regarding undertakers and the disposition of bodies, which may or may not be used for anatomical purposes. It permits the body to be held by the undertaker for 72 hours after death. This bill is of interest to the medical schools of the state and the Anatomical Society, which we hope will determine whether or not they are in favor of these amendments.

The profession should also be interested in House Bill No. 395, introduced by Dr. Patterson, which is an act to regulate the sale of caustic acid or caustic alkali preparations intended for household use and providing penalties for the violation thereof.

Some of these bills have arrived at the point of second and third hearing in the House, and by the time this number of the Journal appears there may have been some changes in their status.

We wish to advise the Committee on Public Policy and Legislation of the county societies that on March 6th there was a hearing on House Bill No. 36, known as the Chiropractic Bill, before the Committee on Public Health and Sanitation.

There will also be a hearing on March 20th of the antivaccination bill, which provides for conscientious objectors who do not wish vaccination to be used in their families.

PROPAGANDA FOR REFORM

The Disappointments of Hexamethylenamin.—Hexamethylenamin has joined the large and growing group of drugs of which much has been expected but which have failed to justify the hopes of their champions. The use to which hexamethylenamin is still devoted with apparent scientific justification is in preventing the growth of microörganisms in the urinary tract and in destroying them when they are present in the urine in infectious diseases, such as typhoid fever. The drug is recommended as an antiseptic in cystitis and as a prophylactic prior to operations on the urinary tract.

Its possible efficacy, however, depends on the elimination through the kidneys with a urine that remains distinctly acid in reaction; otherwise, no benefit is to be expected. Hexamethylenamin has no material antiseptic value as an antiseptic in the cerebrospinal fluid during spinal meningitis. It is not a uric acid solvent. Finally, the drug has been shown to have no diuretic potency. Furthermore, hexamethylenamin is said to be liable to produce renal irritation when the dosage is large or the use protracted (*Jour. A. M. A.,* Jan. 6, 1923, p. 37).

Quayle's "Bob-White Habit Sinkers."—Charles H. Quayle, M.D., of Madison, Ohio, "Medical Director" of the "Dr. Quayle's Sanitarium, A Retreat for Drug Addicts, Alcoholics, and Cigarette Inveterates" and "Specialist in Drug and Liquor Addiction," has been exploiting an alleged cure for chronic morphinism "and any other drug addiction." Formerly the treatment was "not for sale to any layman or person who wishes to treat himself" and physicians were importuned to use it. To-day we find the Quayle's product advertised in the *Police Gazette* and similar literary productions. A "treatment" was purchased by a layman (for twenty-five dollars) and turned over to the A. M. A. Chemical Laboratory for analysis. The "treatment" consisted of four boxes of pills labeled as follows:

"No. 1—Eliminative" (Contained 3 chocolate-coated pills and 1 capsule).

"No. 2—Antidote" (Contained 323 yellow-coated tablets).

"No. 3—Nerve Tonic" (Contained 37 red-coated pills).

"Special Eliminative Bowel Tablets" (Contained twelve white-coated tablets).

The analysis demonstrated that the "treatment" is essentially (1) active elimination by cathartics, (2) the administration of atropin during the stage of morphin withdrawal, and (3) the use of strychnin at the close of the "treatment." It is evident that this is no more a cure than could be devised by any physician who is familiar with modern medical literature. No physician will believe that a patient suffering from chronic morphinism can cure himeslf by any such method as that exploited by Quayle (*Jour. A. M. A.,* Jan. 27, 1923, p. 270).

DIAGNOSED

He: There is an awful rumbling in my stomach—like a cart going over a cobblestone street.

She: It's probably that truck you ate for dinner. —*Lehigh Burr in Medical Pickwick.*

MODERN BABY WISDOM

Now that hospitals are to identify babies by their footprints, the *Columbia-Missourian* further explains that a baby playing with his toes really is trying to find out who he is, anyway.—*Ibid.*

COUNTY MEDICAL SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Perry Clare Smith, M.D., Ambridge.
Bedford—N. A. Timmons, M.D.,Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.*
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Fred E. Ross, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydson Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.

Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Victor J. Gangewere, M.D., Allentown.
Luzerne—H. Irvin Evans, M.D., Ashley, Pa.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—William R. Levering, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Clara R. King, Philadelphia.
Potter—F. Gurney Reese, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

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* Deceased.

March, 1923

COUNTY SOCIETY REPORTS

BERKS—JANUARY

Quite fortunate indeed, were the members of the Berks County Medical Society to listen to a talk upon cardiac diagnosis by Dr. Franz M. Groedel from Frankfurt and Bad-Nauheim, Germany. Dr. Groedel has had a wide experience in cardiac conditions, and he brought to us a message of intense interest, the result of years spent in a profound study of the subject. He spoke in fluent English, so that the problem of understanding his remarks was possible for all.

A feature of the afternoon meeting was a cinematographic reproduction of the heart contractions as they are seen on the fluoroscopic screen. These were made by means of a special instrument, which he designed so that the heart action could be recorded on a moving film about 24 centimeters wide and 20 meters long. The exposures of the heart in action were made by means of two intensifying screens and each exposure was approximately 1/100 to 1/80 of a second. These roentgenograms were reduced to the size image one sees on a standard size cinema film and this film was exhibited.

He showed, first, the apparatus used, then the method of placing the film and the patient to make these records. The next few feet of film showed the heart in action, and later a comparison of heart action with an electrocardiogram of the same heart was shown. This demonstrated very clearly the relation of the various parts of an electrocardiogram to the different phases of cardiac contraction.

He concluded his talk by exhibiting lantern slides showing syphilis of the lungs. Several forms of the involvement of lung parenchyma, root glands, and pleura were shown. Several slides exhibited very well the changes that occurred in lungs after antisyphilitic treatment was instituted. In closing, he touched briefly upon the subject of treatment, dwelling particularly upon the uses of neosalvarsan in combination with mercurial preparations to be used intravenously. Clara Shetter Keiser, Reporter.

DAUPHIN—FEBRUARY

The February meeting of the Dauphin County Medical Society was held in the offices of the local Veterans' Bureau where a most interesting program was furnished by the Bureau staff.

Dr. Frank Reckord, presiding, introduced as the first speakers Dr. Wm. J. Bott, of the Philadelphia district office, and Dr. Melvin M. Franklin, chief of the orthopedic and general surgical section, both of whom highly complimented the local office on the quality of their work.

The scientific program followed: Dr. A. J. Griest, general medical examiner, reported two unusual cases of arteriosclerosis and chronic nephritis without edema occurring in young men between twenty and thirty years of age. The paper was discussed by Dr. D. S. Funk. Dr. G. L. Laverty, general medical examiner, then followed with a report of recovery from a penetrating gunshot wound of the heart resulting in an interesting cardiac murmur, and presented the patient for examination. Dr. L. B. Bradford, of the Ear, Nose and Throat department, gave a short résumé of his work and an interesting exposition of the value of heliotherapy in tuberculosis of the larynx, recommending it as a measure of marked palliative value that allowed many terminal cases to take food and gain weight without the otherwise necessary cocain application. Dr. Carson Coover, the orthopedic consultant, outlined the variety of cases seen by him, and presented three special cases, with x-ray demonstration. Dr. P. W. Eves, dental surgeon of the office, in a paper entitled "Is the Mouth the Gateway to Tuberculosis?" emphasized the importance of dental infection in the causation of apparently unrelated ills and as a possible contributing cause in the acquisition of tuberculosis. Dr. J. H. Fager, Jr., consulting urologist, gave a short résumé of the work in his department. Dr. M. V. Hazen, of the ophthalmological department, read a short paper on choroiditis and scotomata, reporting several instructive cases. Dr. A. Z. Ritzman, roentgenologist, gave an extemporaneous demonstration of interesting plates. Dr. Harvey Smith, consulting surgeon, discussing the abdominal cases referred to him, laid stress on the many cases that had been previously subjected to appendectomy without relief of symptoms, and advised careful study and conservatism in the handling of these psychoneurotic individuals. Dr. J. W. McMullen, consultant in diseases of the chest, reported a case of aortic aneurysm. A paper by Dr. Wm. Wright, consulting neuropsychiatrist, who was unable to be present, was read by Dr. Reckord, and covered the work of his department. Dr. George R. Moffitt, the pathologist of the department, was absent on account of illness.

At the close of the program the members were invited to inspect the offices of the medical department, where refreshments were served by the office employees. The evening was one of profit and enjoyment to all present and acknowledgment of appreciation was extended to Capt. Walter Gallagher, subdistrict manager, and to Dr. Frank Reckord, chief of the medical department. W. M. Kunkel, Reporter.

LUZERNE—JANUARY

At the regular meeting of the Luzerne County Medical Society, held on January 3, 1923, in the Society Building, the following officers were elected for the year 1923: President, Dr. N. L. Schappert, Wilkes-Barre; vice-president, Dr. J. E. Schiefly, Kingston; recording secretary, Dr. E. W. Bixby, Wilkes-Barre; financial secretary, Dr. M. C. Rumbaugh, Kingston; treasurer, Dr. E. U. Buckman, Wilkes-Barre; editor of Transactions, Dr. Lewis H. Taylor, Wilkes-Barre; librarian, Dr. Lewis H. Taylor, Wilkes-Barre; reporter, Dr. H. Irvin Evans, Ashley; censor for 3 years, Dr. H. J. Lenahan, Pittston; director for 3 years, Dr. C. H. Miner, Wilkes-Barre; editor of Bulletin, Dr. John B. Wolfe, Wilkes-Barre.

The following committees were appointed by the new President of the Society: Program Committee—Dr. G. R. Drake, Chairman; Dr. A. C. Trapold, Dr. H. W. Croop, Dr. E. W. Bixby, Dr. N. L. Schappert. Library and Publicity Committee—Dr. Lewis H. Taylor, Chairman; Dr. C. H. Miner, Dr. R. L. Wadhams. Practice of Medicine and Surgery Committee—Dr. H. A. Fischer, Chairman; Dr. J. J. McHugh, Dr. Vivian Edwards. Public Health and Legislation Committee—Dr. M. C. Guthrie, Chairman; Dr. J. J. Kocyan, Dr. E. C. Bahnmiller. Auditing Committee—Dr. H. L. Whitney, Chairman; Dr. M. B. Ahlborn, Dr. E. U. Buckman, Dr. M. C. Rumbaugh. House Committee—Dr. J. T. Howell, chairman; Dr. John B. Wolfe, Dr. John Howorth.

Dr. Robert A. Keilty, of the Geisinger Memorial Hospital, Danville, gave an interesting talk on "The Pathology of Thyroid Diseases," and demonstrated a splendid collection of gross specimens with photographs and photomicrographs.

Dr. Harold L. Foss, Surgeon in Chief of the Geisinger Memorial Hospital, Danville, read a paper on "The Present Status of the Treatment of Goiter." Discussion followed by Drs. H. L. Gibby, Charles Miner, E. L. Meyers, R. R. Janjigian and L. Edwards, and was closed by Drs. Keilty and Foss.

The Thirty-Ninth Annual Dinner of the Luzerne County Medical Society was held at the Westmoreland Club, Wilkes-Barre, on January 17, 1923. Our president, Dr. Walter Davis was unable to act as toastmaster on account of a serious operation performed upon him recently, but was present at the dinner. Dr. E. L. Meyers acted as toastmaster and filled the chair splendidly. The speakers of the evening were Hon. J. B. Woodward, on "The Learned Professions," and Dr. Lewis H. Taylor, on "Auto Suggestion."

Dr. George Morris Piersol, Professor of Medicine in the Graduate School of Medicine of the University of Pennsylvania, spoke on "Advanced Medical Education." H. Irvin Evans, M.D., Reporter.

MONTGOMERY—JANUARY-FEBRUARY

The annual meeting of the Montgomery County Medical Society was held at Montgomery Hospital, Norristown, January 3, 1923, with the following members present: Drs. Wright, Roberts, W. G. Miller, Sherborn, G. W. Miller, Hunsberger, McLaughlin, Shelly, Heffner, McCracken, Parker, Elmer, Bostock, Hubley, Doran, Neiman, Wolfe, Gotwals, Irwin, Garner, Simpson, Atkinson, Little, Beideman, Eisenberg, Knipe, Moore and Buyers.

The society heard annual reports from the officers and committees. It was the consensus of opinion that advertisements should be secured for the Bulletin to help defray expenses of publication.

The following officers were elected for 1923: President, Willis Read Roberts; vice-presidents, Robert P. Elmer and John B. Sherborn; recording and financial secretary, E. S. Buyers; corresponding secretary and reporter, J. C. Simpson; treasurer, W. G. Miller; censors, Percy H. Corson, George F. Hartman, W. G. Miller; district censor, Wm. McKenzie; House of Delegates, J. N. Hunsberger, H. A. Bostock; alternate delegates, E. G. Kriebel, J. R. V. Wolfe, W. J. Wright, J. Elmer Gotwals; registration committee, J. C. Simpson, F. B. Little; trustees, H. A. Bostock, E. S. Buyers, W. G. Miller, G. F. Hartman, J. N. Hunsbergeer.

Dr. Roberts made a brief address thanking the society for the honor conferred upon him. Dr. G. W. Miller, the outgoing president, read a well-prepared paper on many things for the betterment of the profession.

The regular meeting of the Society was held at Montgomery Hospital, Norristown, Wednesday, February 7, 1923, with the following members present: Drs. Roberts, Elmer, Bostock, Little, Atkinson, Hunsberger, Wolfe, Dill, Irwin, Macdonald, Simpson, Eisenberg, Beideman, Hubley, I. Shelly, Garner, Lukens, Knipe, Wright, McLaughlin, Fabbri, G. W. Miller, Sherborn, W. G. Miller, and Buyers.

An assessment of $5.00 per member was made for the Medical Legislative Conference, and Dr. Bostock was assigned the duty of collecting the same.

The speaker being ill, a symposium upon measles was in order and the following took part in the discussion: Drs. Roberts, I. Shelly, Elmer, Bostock, Lukens, Dill, Hunsberger, Macdonald, Fabbri, G. W. Miller and Wolfe. John C. Simpson, Reporter.

PHILADELPHIA

January 10th

Dr. J. Norman Henry, president, in the chair.

Concerning the Philadelphia Association for the Prevention and Relief of Heart Disease: Dr. Joseph Sailer, who presented this paper, gave three objects as reasons for the existence of the association: 1, to cure disease; 2, to alleviate suffering; 3, to prevent the occurrence of disease. It is the duty of society, said Dr. Sailer, to give care to anyone diseased or crippled, but it is better still to avoid injury by using every means possible for the prevention of such abnormal conditions. We have seen progress made along this line not only in diseases such as tuberculosis and cancer, but seven years ago in New York an association was formed relative to the prevention of heart affections. The plan, which began as a factory especially suited for the working man who suffered from a heart malady, was not a success, yet the idea has formed the basis for such an organization as that one established two years ago in Philadelphia.

The Philadelphia Society for the Prevention of Heart Diseases attempts to minimize diseases, to keep those who have fallen victim to a heart condition in as good surroundings as possible, and to aid those who must work to the earning of a livelihood suited to their strength. Much of the work is done with children. In those who have no cardiac lesion all foci of infection are removed; in those whose hearts are already the seat of pathology especial care must be taken to avoid rough games and the climbing of stairs. This problem has been satisfactorily worked out in New York by the establishment of a Cardiac School. When the child is seriously disabled and in poor hygienic surroundings he is taken care of in sanatoria provided for that purpose. The laboring man has been supplied with such work as basket weaving and it is hoped that working housekeepers may be sent out to help the woman who must do severe physical work in the home. Before such plans can be carried out, a careful knowledge of the case is necessary, and for that purpose many heart stations are being placed in our hospitals.

Physical Examination of the Heart: Dr. George W. Norris' opening remarks were directed toward the fact that physical examination in heart conditions often falls short of its purpose unless it is accompanied or preceded by a careful and exhaustive history. Especially is this true in the rheumatic triad and syphilitic infections. That the two methods may be combined to advantage was brought out in St. Lawrence, N. Y., when in a series of 100 cases it was shown that with one known tuberculous patient in the family the remaining members showed 14.6% tuberculosis; and in the circumstance of a heart lesion 14.8% demonstrated the rheumatic triad or gave a definite syphilitic history.

The first essential for a good physical examination, said Dr. Norris, is careful inspection. A diagnosis may be made by this means alone. The patient must be stripped to the waist, thus bringing to the notice the type of the disease and the degree to which it has progressed. It is not necessary to auscult a patient to determine the presence of tricuspid insufficiency when one may see a pulsating liver, throbbing veins of the neck and marked edema of the feet. A phlebectasia around the chest at the level of the diaphragm is often indicative of organic disease of the heart or lungs. Especially interesting is the epigastric or subcostal angle in abnormal types of breathing. Hoover has said that during inspiration two sets of muscles come actively into play. Normally the intercostals are stronger than the diaphragm, thus causing an outward pull to the ribs, but if the diaphragm is depressed, as in pleural effusion, there is a more straight down pull resulting in the fixing of one side. The thyroid gland should always be inspected in cardiovascular conditions, since it may prove a valuable aid in the determination of the etiology of a heart malady. Examination of the hands is of help in many cases, but especially so in the recognition of the effort syndrome, when they are wet, cold, clammy and extremely blue. Palpation and percussion may be used together or separately in outlining the heart. The area of dullness may be ascertained by the sense of resistance alone. In ausculting the heart it is many times true that feeble heart sounds are thought to be indicative of weak cardiac muscle, when, as a matter of fact, the heart is greatly displaced from its normal limits. Such may be the case in pregnancy, when there is such a lifting of the heart as to seem almost a hypertrophy; and in the opposite condition when the diaphragm is low and the heart hangs from its vascular attachments. Over the ensiform, in the latter type, the cardiac sounds would be strong and clear, over the heart area they would be weak. It is therefore necessary to determine the type of individual which one is dealing with in order to determine the type of heart which he possesses. An important point to remember in listening to heart murmurs is that change of posture is essential, as seen in the murmur of mitral stenosis, which is best heard in the left lateral position after exercise.

It is not so important, however, to make a diagnosis, but it is of the greatest interest to decide as to the progressive nature of the lesion. This is not so easy to determine by physical examination alone. The patient may come complaining of symptoms when there is no evidence of a heart condition and we must always ask ourselves: Is this an old valvular lesion with a superimposed effort syndrome? Is this condition the result of thyroid stimulation? Is it a subacute endocarditis?

General discussion: Dr. Long stated that for many years he has examined the under surface of the tongue for tortuous vessels. When a marked tortuosity and dilatation is found he gives a bad prognosis both as to the treatment and duration of the cardiovascular condition.

Dr. Norris said that subacute infectious endocarditis is often overlooked. Such cases are not only hard to recognize, but hard to treat. They run a temperature for a few weeks, ranging from 99 degrees to 100 degrees, they tire easily, are anemic, do not react to digitalis and finally break down or have a fatal embolus. These cases often have small pit marks on the finger nails.

Clinical Application of Electrocardiography: The electrocardiogram, said Dr. James E. Talley in presenting this paper, will not supplant the finger or eye but will add to their findings. It is an adjunct in diagnosis and prognosis, and is a help in the treatment instituted. We have come to a better understanding of the use and action of cardiac drugs since its establishment, finding, in one instance, that digitalis acts much earlier than has been thought.

Dr. Tally then threw on the screen a series of electrocardiographic tracings, beginning with one which illustrated the normal rhythm and rate and passing in succession through many varieties of heart tracings such as auricular flutter, heart block, the inversion T wave flattened under the influence of digitalis, etc.

The discussion was led by Dr. William D. Stroud, who said that the electrocardiogram is of advantage to medicine in two ways: 1, in the scientific way by helping in the interpretation of pathological findings; 2, in the clinical way by aiding the physician in his diagnosis. It may be of use in right ventricular preponderance, in subacute infectious endocarditis, in the irregularities, in the pseudo-angina cases.

General discussion: Heart disease can no longer be diagnosed by determining a murmur at a definite spot. The percussion of heart limits is found to be more accurate when checked by the fluoroscope. Through mechanical means we are able to discover the existence of disease which would not have been suspected otherwise. The electrocardiogram is of help in the avoidance of digitalis in heart block.

Dr. Talley: The history of the case, the apex beat, the percussion note may all give information, but a certain definite diagnosis may be made by mechanical means.

Report of Two Cases of Coronary Thrombosis, with Remarks Upon Diagnosis and Treatment: Dr. David Riesman began his paper by saying that the first recorded care of coronary obstruction was described by William Harvey.

The causes of coronary occlusion are either embolic or thrombotic processes, the consequences depending on the size of the vessel, the slowness of the occlusion, and the previous state of the heart muscle. Thrombotic occlusion is more frequent than embolic. Obstruction of a coronary artery leads to infarction, death of the tissue beyond the obstruction being due primarily to a deprivation of oxygen.

The clinical features are brought out in the following cases:

Case 1.—That of a man, N. A., 49 years of age, Russian. First consulted a doctor in 1918 for pain in the left leg which resulted in a blanching of the foot. Physical examination was negative except for total absence of pulse in the left dorsalis pedis artery. On December 31, 1921, he was suddenly seized by a squeezing, cramp-like pain in the middle of the chest, which was relieved by morphine and hot compresses. Several other attacks of similar nature followed. On January 12, 1922, he was seized with violent paroxysmal pains in the midsternal region which occasionally radiated to the back. Morphine was given without relief. Physical examination was again negative except for the absence of the dorsalis pedis pulse on the left side and a hypersensitive precordium. The heart was regular. All medication failed to give relief and the patient suffered intense agony until three o'clock the following afternoon, when he had a convulsive seizure and died, respiration continuing after the heart had stopped.

Case 2.—M. A., 45 years old. The patient, a brother of the foregoing, had had a high blood pressure for a number of years. On October 5, 1921, he was attacked with pain in the chest which increased in severity and failed to abate with treatment. He was profoundly shocked. His blood pressure gradually but steadily fell from 200 to 80 systolic and 50 diastolic. The heart was a little enlarged, the sounds were feeble, there was total absence of the dorsalis pedis artery in the left leg, and the patient had a little fever. There was intense fear of impending death. Leeches, a total of twenty-three, were applied to the precordium with immediate improvement and eventual recovery. About a year later the patient had another attack of equal intensity accompanied by pain, shock, great fall in blood pressure, and fever. Leeching seemed again to bring prompt relief. Since December, 1922, the patient has been in a very satisfactory condition.

The characteristic features of coronary thrombosis are as follows: 1, prolonged severe retrosternal pain; 2, symptoms of collapse with great fall in blood pressure; 3, blanched leaden hue of the skin, slight cyanosis of the lips, coldness of the extremities; 4, fear of death or conviction of dissolution; 5, fever; 6, slight leukocytosis; 7, perhaps absent dorsalis pedis pulse; 8, history of previous attacks; 9, at times a characteristic electrocardiogram; 10, sometimes pericardial friction.

In the treatment of this condition the first indication is to relieve pain. The usual anodynes fail. Dr. Riesman has used papaverin. Sodium citrate is of use in that it lessens the coagulability of the blood. Digitalis is not advisable at the height of the attack because of the damage which has been done to the myocardium. Instead, camphorated oil, caffein and sodium benzoate may be used. External heat and careful feeding are necessary. Prolonged rest is of the utmost importance. Tobacco should be forbidden for all time.

January 24th

Dr. David Riesman, president, in the chair.

The Prospects of the Prostatic: This paper was presented by Dr. E. L. Keyes, of New York. Dr. Keyes' observations were first confined to what he termed the natural history of prostatism. To begin with, in doing the suprapubic operation on the enlarged middle lobe it is the surgeon's first impulse to rejoice when he finds no enlargement of the lateral lobes, but should he merely remove this lobe the retention of urine will not be relieved for the reason that the adenomatous middle lobe is backed by a sclerotic obstructing prostatitis of the remaining prostate. For the sake of clearness these two conditions must be discussed separately, but it has been proved microscopically that the two may exist in the same gland. We must distinguish on the one hand the sclerotic prostate causing retention of urine from contracture of the bladder neck, and on the other hand the big adenomatous prostate causing retention by distorting the urethra though it actually dilates the bladder neck.

Concerning the pathogenesis of prostatic sclerosis, the onset is usually the result of chronic prostatitis due to gonorrhea, tuberculosis and stone. The condition often remains symptomless, commonly causes a mild interference with bladder and sexual functions, and leads to retention of urine rarely and only after many years have elapsed. Retention due to sclerosis occurs earlier in life than that due to adenoma.

Though the etiology of prostatic sclerosis is quite clear it has yet to be determined what part heredity, sexuality and infection plays in causing the prostatic adenoma.

At what age does prostatism begin? Symptoms of retention due to adenoma begin three times out of four between the ages of 50 and 70; those of sclerosis about one half before 45 and the other half between that age and 65. Obstruction after 70 in usually carcinomatous. The onset of retention is marked by diurnal frequency and increase in nocturnal frequency. Occasionally acute complete retention is the first noteworthy symptom.

The progress of the disease varies. The patient will almost certainly die of his disease unless he is operated upon. And then comes the question of the best time for operation. The least that can be asked of a patient, said Dr. Keyes, is that he allow the operation before he reaches that stage described by Guyon as "chronic complete retention with distention," the state of impaired renal function, of dribbling, of grave lesions in the bladder and kidney.

The prognosis of an attack of acute retention depends largely upon the prompt intelligent treatment instituted, and of next importance is the age of the patient. The expectation of life from the first symptom to chronic complete retention, in a series of cases was 6 years for patients under 50, four years for those under 60 and two years for those whose first symptoms occurred after 60.

Such is the natural history of prostatism. What can the surgeon offer to ameliorate the lot of the prostatic? The first problem to be faced is that dealing with the ideal moment for prostatectomy. Surely not after the kidneys have become damaged and the patient suffers acute retention. Nor too early before the adenoma-bearing tissues have declared themselves, thus necessitating another operation. For this reason Dr. Keyes would not recommend the perineal operation, since it often leaves behind little adenomata, the operation of choice being the two-stage suprapubic prostatectomy.

The question of greatest interest to the surgeon is to know what proportion of prostatics die of their disease in spite of the best care, and why they die. The results are not encouraging and depend upon the perfection of treatment and the condition of the patient when he applies. In St. Vincent's Hospital, where the patients have every care and are in comparatively good condition, the mortality after operation is 14%. In Bellevue Hospital, which cares for the dregs of the population, the mortality is 49%.

In the case of operation for sclerotic prostate, the outlook is more cheerful as to mortality, but they are very hard to cure. After operation they require prolonged treatment by dilatation and even then few are relieved of retention.

The discussion was led by Dr. John B. Deaver, Dr. B. A. Thomas, Dr. Alexander Randall, and Dr. W. H. MacKinney. Dr. Deaver said that all enlarged prostates tend to become malignant and that an inflammation may be engrafted on the neoplasm already present. He agreed with Dr. Keyes in saying that the prognosis for ultimate cure is not favorable. Two per cent to 4 per cent following operation die within one year after leaving the hospital from complications and late results. These complications may be suppression of urine, shock, uremia, pulmonary edema, etc.

Dr. B. A. Thomas said that in the vast majority of prostatic cases there is a cellular infiltration. The cause of enlarged prostate is probably a hyperplasia resulting from sexual activity during active life. In considering the treatment, the condition falls into two classes: those treated by nonoperative measures, and those treated by operation. In the first class some refuse operation, in others the symptoms are not considered sufficient and many are too far advanced in their disease to undergo operation. In considering operation it is well to remember that the younger the patient, the better are his chances of recovery. The factors which influence his prognosis are concerned with his kidney function and his general health, the condition of his heart muscle and the range of his blood pressure. To restore a patient to the operative state, readjustment of the kidney function is necessary. This is best done by the two-stage operation, the first stage that of careful drainage, which is done by cystotomy or by introducing the permanent catheter and the second that of the actual operation. The cystoscope is a valuable aid in determining slight enlargement of the gland. To insure success the patient must have good primary care, great discrimination must be used in determining the type of operation to be used, the technique of enucleation must be good, and the postoperative care must be of the best.

Dr. Alexander Randall said that prostatectomy today not only has a high mortality, but in the hands of the best it carries with it a high morbidity. The surgeon must figure on relieving the man in his emergency, and at the same time he must realize what the patient faces when he leaves his care.

The prostate may be approached by two paths. In one the prostate has enlarged through the sphincter, in the other the enlargement has taken place in situ, and should a suprapubic operation be attempted in this latter state the sphincter would have to be dilated. A perineal operation would be better in that case.

No bladder should be opened without a cystoscopic examination, because the case may be an inflammatory condition, it may be cancer, the bladder may be reacting from a spinal disease, and the process may have progressed to the stage of nonoperability.

The Neuropsychiatric Aspect: Dr. Albert C. Buckley said that in spinal conditions the bladder syndrome is important from the standpoint of determining which symptoms are the result of deficient nerve supply to the bladder and which the result of prostatic disease. In locomotor ataxia and beginning spinal cord lesions a neurologist should be called to the patient before operation. From the purely mental standpoint many of the sexual conditions found in old men, such as pseudovirility, and delusive ideas, are reflex from prostatic irritation.

General discussion: Dr. G. B. Massey said that the high frequency current placed in the rectum is of aid in some cases. The apparatus so devised for this use is arranged in such a manner as to produce a rhythmic wave current which increases and decreases forty times a minute. By this means the muscles of the pelvis are stimulated.

Dr. Keyes said that electrotherapy has not been widely practiced, but Dr. Keyes agrees that patients who suffer from symptoms of congestion may be relieved. A high blood pressure is rarely found in this condition. A cystoscopic examination is always good, except when there is excessive hypertrophy of the prostate, but on the other hand there are mortalities resulting from the cystoscopic use. Dr. Keyes thinks that the suprapubic operation is the best for the fibrotic prostate and has no fear of rupturing the internal sphincter. Clara R. King, Reporter.

WARREN—FEBRUARY

Dr. Lawrence Litchfield, President of the State Society, paid us a visit Monday, February 19th, and gave our members a rare treat. Dr. Litchfield's offer to hold a clinic was accepted with much pleasure and our only regret is that we could not have him for a week. It was the first time anything like a clinic has been held in Warren. We have a hospital with 75 beds, but no one ambitious enough to work up hisories or go over the patients sufficiently to make them available for teaching. With the limited time at his disposal seven cases were chosen for demonstration. The clinic was held in the operating room of the hospital and 18 physicians and a number of nurses were in attendance.

Case 1 was a young man who presented signs of arthritis in the lower extremities. By exclusion the diagnosis was made of a possible growth in the lumbar region, perhaps an osteo-arthritis. True sciatic neuritis is rare. There is contracture of right knee joint but no involvement in the joint itself. The tendon reflexes are exaggerated. The tenderness of the muscles points to irritation of the nerve fibres. An enlarged epitrochlear gland was found, which would warrant a suspicion of syphilis. Blood Wassermann was negative. Spinal fluid should be taken before syphilis is excluded absolutely.

Case 2. A young man on inspection showing jugular vein more prominent on left side, a sign of some obstruction. On examination a large pleural effusion is noted on left side displacing heart far to the right. The effusion followed a recent attack of grippe, but this man, aged 22, gives a history of left-sided hemiplegia occurring last summer while at work in a hay field. There is a history of pulmonary tuberculosis, but the cause of the hemiplegia is uncertain. Dr. Litchfield elaborated on the difference between effusion and lung consolidation. On palpation the chest wall feels flat, the ribs are effaced. There is no level to the fluid, it is usually distributed evenly over entire lung area. When there is percussion over spines of vertebra from above downward, there is dullness over the spines in effusion, but resonance if pneumonic consolidation. The hemiplegia is clearing up, although there remains marked ankle-clonus. The blood was negative for Wassermann. Eight ounces of fluid were removed yesterday and further withdrawal was recommended.

Case 3. Male, aged 56. Straw-colored appearance, history of much weakness and shortness of breath. Family history negative. Lungs and heart normal. Liver palpable. Sensation in legs not impaired. Paresthesia in lower extremities with increasing weakness means pernicious anemia. Blood count is 1,200,000; hemoglobin 30% and a few megaloblasts. A number of transfusions have been made with slight improvement. One of the early signs is loss of vibration sense when tuning fork is applied to bone. Cases that have transfusion may not live longer, but they have less discomfort. Splenectomy not advisable except in hemolytic cases. Liver is not ordinarily palpable. When the edge is definitely felt it is apt to be pathologic. Small transfusions at short intervals are best.

Case 4. Woman, aged 23, 5 feet 8 inches, weighing 105 lbs. Complains of muscular weakness, unable to work, had a nervous breakdown after which she lost 45 pounds down to her present weight. Menstruation absent 9 months. Tachycardia. Important to consider nutrition or body weight. Three things to bear in mind in these cases of nervous women—neurasthenia, thyroid and cardiac. In a Boston clinic 30% of cases sent in as thyroid have no evidence of thyroid trouble, and 30% diagnosed as heart trouble have no evidence of heart involvement. At present most signs of thyroidism are absent in this patient. No tremor and on exophthalmos. A ligation of the thyroid artery had been performed some time ago, so that the present undernutrition is probably due to the previous thyrotoxicosis. Should remain in bed until she has gained 30 pounds or more, with foot of bed raised. Unless physical signs of heart affection are present, hypertrophy of left ventricle, etc., the heart should be considered as a cause of the symptoms referable to it. Experiments made by Marine and others show that cortical portion of the suprarenal gland controls metabolism through the thyroid. A characteristic thing in thyroid disease is extreme weakness. By feeding the cortical substance of the fresh sheep's gland a considerable increase in weight has been obtained. In Thyroid toxicosis Dr. Litchfield believes the x-ray of great value.

Case 5. A woman of 22 showing progressive numbness in legs for past nine months, with marked foot drop, no clonus, but exaggerated knee jerks. No disturbances in upper muscles. Absence of Achilles reflex. The gait is characteristic. No sensory disturbance. Bilateral neuritis is usually toxic in nature. Alcohol and lead are to be suspected. No history of either, but well to look for alcohol poisoning.

Case 6. Was that of a woman who has suffered for many years with severe headache. Various causes have been assigned but none seem to lead anywhere. X-ray fails to show any organic lesion in the skull. Eye grounds are normal and give no evidence of cranial pressure. No symptoms of syphilis and various laboratory tests are negative. Has gained in weight 40 lbs. in one year, but headache existed long before. Dr. Litchfield could not throw any light on this case.

Case 7. A girl aged 22, who gave the appearance of 16 years. She had acute rheumatic fever 10 years ago, since which time heart symptoms appeared. Heart shows enlarged auricle, presystolic murmur. Symptoms of decompensation. Diagnosis—mitral stenosis. No mitral stenosis without enlargement of the auricle.

There were many questions asked of Dr. Litchfield both as to diagnosis and treatment to which he replied to the fullest extent possible. It is the first time a president of the Society has visited Warren, and as one member said, there have been few presidents who could have given the clinic Dr. Litchfield did.

At noon he was a guest of the local Rotary Club, where he made a brief address on medical legislation. After the clinic in the afternoon, a dinner was given by Dr. Hamilton at the Elks' Club to Dr. Litchfield and the members of the County Society. The day was so much occupied with the clinic that there was no opportunity for business matters. If, instead of one clinic, we and other societies could have during the year a dozen such, I am quite sure our organization would be doing far greater good to its members and the community than in any other way. The average man needs that practical demonstration on his own patients on the cases he has worked over and needs the help of the real teacher and clinician.

M. V. BALL, Reporter.

STATE NEWS ITEMS

DEATHS

DR. JAMES J. DICKINSON, of Pittsburgh, died on February 16th. He was born in 1888, and was graduated from Jefferson Medical College of Philadelphia in 1913.

DR. CLARENCE C. HILL, of Meadville, died on February 5th. Dr. Hill was born in 1852 and was graduated from Bellevue Hospital Medical College, New York, in 1874.

DR. WALTER L. CULBERTSON, of Philadelphia, died on February 3d. He was born in 1882, and was graduated from Maryland Medical College, Baltimore, in 1911.

DR. J. COLES BRICK, of Philadelphia, died on February 4th, aged 62 years. Dr. Brick was a graduate of Jefferson Medical College of Philadelphia, class of 1894.

DR. MARY THOMAS MILLER, of Philadelphia, died on February 7th. She was a graduate of the Woman's Medical College of Pennsylvania, Philadelphia, class of 1899.

DR. J. B. GROVER, of Peckville, aged 55 years, died on February 21st, following an illness of three weeks. He was graduated from Albany Medical College, Albany, N. Y., in 1892.

Dr. Joseph C. Egbert, of Wayne, aged 69 years, died on January 17th, from heart disease. Dr. Egbert was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1880.

Dr. William H. Blair, of Erie, aged 78 years, died on January 7th. Dr. Blair was graduated from Western Reserve University School of Medicine, Cleveland, in 1873.

Dr. Thomas Purcell, of Erie, died on December 8th, aged 71 years. Dr. Purcell was graduated from the University of Buffalo (N. Y.), Department of Medicine, in 1888.

Dr. Frederick L. Nisbet, of Meadville, aged 60 years, died on January 12, from erysipelas. Dr. Nisbet was graduated from New York University Medical College, New York, in 1887.

Dr. John V. Albert, of Pine Grove, aged 74 years, died from heart disease on January 23d. He was graduated from Jefferson Medical College of Philadelphia in 1870.

Dr. John Henry Musser, of Lampeter, aged 77 years, died on January 19th, from cerebral hemorrhage. He was graduated from Jefferson Medical College of Philadelphia in 1866.

Dr. Harry Wright McKee, of New Castle, who was graduated from Jefferson Medical College of Philadelphia in 1887, died on January 13th, from heart disease, at the age of 60 years.

Dr. Edward W. Jones, of Philadelphia, died on January 27th, from heart disease, at the age of 60 years. Dr. Jones was a graduate of Hahnemann Medical College and Hospital of Philadelphia, class of 1890.

Dr. Joseph Ellwood Blanck, of Green Lane, aged 59 years, died on January 19th. Dr. Blanck was graduated from Jefferson Medical College of Philadelphia in 1886, and was formerly a member of the state legislature.

Dr. Benjamin M. Bartilson, of Braddock, who was on the staff of the Braddock General Hospital, died on January 18th, aged 57 years. Dr. Bartilson was a graduate of Jefferson Medical College of Philadelphia, class of 1893.

Dr. Robert S. Stewart, of Washington, aged 85 years, died on January 10th, from senility. Dr. Stewart was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1869. He was a Civil War veteran and was formerly on the staff of the Washington Hospital.

Dr. Charles E. Woodward, of West Chester, formerly secretary of the city board of health and registrar of vital statistics, died from pneumonia some time in January, aged 76 years. Dr. Woodward was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1874.

Dr. Anna R. Osmond, of Philadelphia, formerly on the staff of the Woman's Hospital of Philadelphia, and for twenty years physician to the woman's department of the Philadelphia County Prison, died on February 1st at the age of 65 years. Dr. Osmond was a graduate of the Woman's Medical College of Pennsylvania, Philadelphia, class of 1897.

Dr. Washington F. Elliott, of Beaver Falls, aged 66 years, died on January 10th from pneumonia. Dr. Elliott was graduated from Jefferson Medical College of Philadelphia in 1887, and at the time of his decease was chief of the staff of the Providence Hospital. He was also a member of the board of public school examiners.

Dr. S. B. McDowell, of Philadelphia, died on December 10, 1922, of pulmonary edema. He was born in 1849, and was a graduate of Jefferson Medical College of Philadelphia, class of 1876, and of the University of Pennsylvania School of Medicine, class of 1879. He had been a resident of Philadelphia for more than forty years, and in his early career was connected with the Northern Dispensary and later with the Lying-in-Charity.

Dr. Louis H. Jacob, of Philadelphia, aged 44 years, died in the Lankenau Hospital of Philadelphia, on February 8th, after an illness of ten days, from suppurative appendicitis. Dr. Jacob was a graduate of the Medico-Chirurgical College of Philadelphia, class of 1901, and prior to his death was on the genitourinary staff of the Graduate School of the University of Pennsylvania.

Dr. Harriet Judd Sartain, of Philadelphia, who was a pioneer of her sex in medicine, died on February 8th, at the age of 93 years. Dr. Sartain was born in Waterbury, Conn., in 1830, and received her medical degree in Cincinnati in 1854. She bears the distinction of having been the first woman to be elected to the Homeopathic Medical Society and later was elected to the American Institute of Homeopathy.

Dr. J. M. Martin, of Grove City, aged 74, for many years prominent in state political circles, died on February 5th following an illness of several months. Dr. Martin was graduated from Bellevue Hospital Medical College, New York, in 1874. He served five terms in the Pennsylvania Legislature and was a recognized county leader in politics. When the Spanish-American War broke out Dr. Martin served as assistant surgeon of the 15th Regiment, N. G. P.

Dr. Walter A. Rose, of Rochester, aged 80 years, died on January 1st from bronchopneumonia. Dr. Rose was born at St. Thomas, Ontario, Canada, and in 1855 became a citizen of the United States. He was graduated from the University of Buffalo (N. Y.), Department of Medicine, in 1867. He was a railway surgeon for the Pennsylvania Railroad for over thirty years, and for twenty-five years he gave his services free to the Passavant Memorial Homes for Epileptics at Rochester.

Dr. Cyrus Lee Stevens, of Athens, who was president of this Society in 1919, for many years was secretary, and from 1904 to 1920 was editor of this Journal, died at the Packer Hospital, Sayre, February 19th, after a two-months' illness. He was 72 years old. Dr. Stevens was graduated from the College of Physicians and Surgeons, Keokuk, Iowa, in 1880. From 1880 to 1883, he was professor of surgery at Central Turkey College, Aintab, Turkey, in Asia. In 1884-85 he was medical superintendent of the New York Postgraduate Medical School and College, and since that time has been a general practitioner at Athens. His wife survives him.

Dr. Samuel Hess Heller, of Lancaster, formerly on the staff of the Lancaster General Hospital, died on January 21st, after an illness of twenty-four hours, from cerebral hemorrhage. Dr. Heller was born in 1873 and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1899. He had an enviable record of service in the National Guard of Pennsylvania. He was an authority on camp sanitation and ended his active military career with a tour of service as a Sanitary Inspector in the Philippine Islands. He organized and at the time of his death was Commanding Officer of Hospital Company 107, of the newly organized Medical Regiment in the National Guard of the State.

Dr. Caroline M. Purnell, of Philadelphia, aged 57 years, died on February 3d after a long illness induced by overwork during the war service in France. Dr. Purnell was graduated from the Woman's Medical College of Pennsylvania, Philadelphia, in 1887. At a time when it was unusual for women physicians to study with famous surgeons, Dr. Purnell went to Cleveland and placed herself under Dr. George W. Crile, and later studied with the Mayo Brothers, at Rochester, Minn. She was a member of the Obstetrical Society of Philadelphia; associate professor of gynecology at her alma mater; special commissioner for the American Women's Hospitals in France during the World War; gynecologist to the Woman's Hospital, the West Philadelphia Hospital for Women, the Friends Hospital, the Norristown State Hospital for Insane, Norristown, and the State Hospital for Chronic Insane, Wernersville. She was one of the first women to be admitted as a fellow of the American College of Surgeons. Her remarkable executive ability coupled with her medical and surgical knowledge made her the immediate choice for commissioner when Unit No. 1 was organized in New York in 1918. The government appointed twelve physicians on the staff, with headquarters in Paris. Through her efforts the unit obtained an ambulance, the Red Cross was interested, and the necessary equipment and supplies were obtained. Her work abroad won for her recognition from the French government, which bestowed upon her two medals and presented her with a two-foot statue in bronze of Jeanne d'Arc.

MARRIAGES

James O. Corson, son of Dr. and Mrs. Joseph M. Corson, of Hughesville, and Miss Margaret Marie Rich, daughter of Mr. and Mrs. M. B. Rich, of Woolrich, were united in marriage on January 27th.

Announcement is made of the marriage of Dr. Lever F. Stewart and Mrs. Elizabeth Eyster, of Clearfield, on January 25th. After visiting Eastern cities the Doctor with his bride set sail for the Bermudas.

ITEMS

DIPHTHERIA WEEK IN APRIL

Will you help to lower the mortality rate of diphtheria in Pennsylvania? How? By assisting in the campaign of education to be conducted during a week in April, 1923, in each county of this state.

Committee on Public Relations.

Dr. H. J. Cartin, of Johnstown, has been seriously ill since January 13th.

Dr. M. A. Barnes, of Pardoe, is spending the winter in Pasadena, California.

Born to Dr. and Mrs. J. M. Skirpan, of Monessen, on December 6th, a son, John M. Skirpan, Jr.

The engagement of Miss Sadie Rosenfield to Dr. Matthew S. Ersner, both of Philadelphia, was recently announced.

Dr. Lloyd Rothfuss, who is an interne at the Williamsport Hospital, has fully recovered from a severe attack of typhoid fever.

Dr. and Mrs. William J. Wilkinson, of Sellersville, are spending the winter on their house-boat, "Rambler," at Miami, Florida.

Dr. H. B. Davis, of Lancaster, has given up the practice of general medicine and is taking a special course in roentgenology under the instruction of Dr. W. H. Stewart, Roentgenologist to the Lenox Hill and other hospitals in New York.

The Editor of this Journal has received information that several good positions are open to members of the medical profession, under 40 years of age, in the department of a well-known corporation.

Accompanied by her mother, Dr. Edith MacBride, of Sharon, left on February 26th for Boston, where she will do some postgraduate study in ophthalmology at the Harvard Postgraduate School of Medicine.

Dr. C. J. Vaux, a former president of the Allegheny County Medical Society, addressed the Kiwanis Club of McKeesport on February 20th, on "Sickness Prevention and the Truth About Antivivisection."

Dr. Lawrence Litchfield addressed the Rotary Club of Meadville on February 14th, and the Rotary Club of Warren on February 19th, on "Citizenship from the Point of View of the Medical Society of the State of Pennsylvania."

Dr. Leo H. Bernd, of Philadelphia, has been elected Commander of the Harry Ingersoll Post, No. 174, American Legion, and chairman of the Executive Committee of the Society of the Third Division. He is Clinical Professor of Surgery at the Woman's Medical College.

Dr. Charles H. Miner, of Wilkes-Barre, has been appointed by Governor Pinchot to fill the office of Commissioner of Health of the State of Pennsylvania. Dr. William Gray Turnbull, medical director of the Cresson Sanatorium, has been appointed Deputy Commissioner of Health, to succeed Colonel John D. McLean, who resigned.

The School of Medicine of the University of Pittsburgh will give a postgraduate course of three weeks' duration, beginning May 31, 1923. This course will be devoted to the interests of the general practitioner, and the instruction will be by lectures, clinics and demonstrations, at the School of Medicine and in the large hospitals of Pittsburgh.

On February 13th the members of the Harrisburg Hospital Staff Association celebrated their fiftieth anniversary at the Academy of Medicine. At this meeting a fund was donated for the purpose of creating a memorial operating room fund to be known as the Dunott-Coover Memorial Operating Room Fund, which was accepted by the Hospital Staff Association. Dr. Thomas J. Dunott was the first physician to be interested in the Harrisburg Hospital and Dr. F. W. Coover was his first assistant.

The members of the hospital staff were photographed and those present were the following: Drs. Harvey A. Smith, J. B. McAlister, George B. Kunkel, William A. Wright, F. W. Coover, H. B. Walter, D. S. Funk, J. F. Culp, J. W. Park, J. B. Stull, M. W. Emrick, E. R. Whipple, John Fager, J. E. Dickinson, S. B. Traver, S. F. Hassler, Charles S. Rebuck, Maude Exley, G. L. Dailey, C. P. Faller, Jesse L. Lenker, M. H. Sherman, G. L. Laverty, L. W. Wright, John F. Good, George W. Bauder, A. Z. Ritzman, Richard J. Miller, H. H. Farnsler, Norman S. Shepler, Park A. Deckard, Carson Coover, J. F. Reed, J. C. Ludes, H. M. Kirkpatrick, H. R. Douglas and John M. J. Raunick. The members of the Association unable to attend were Drs. George R. Moffit, L. W. Frasier, C. E. Jauss, John Oenslager, Jr., W. Minster Kunkel and V. Hummel Fager.

GENERAL NEWS ITEMS

A new journal has come to our desk under title of the *Bulletin of the Buffalo General Hospital*, Volume 1, No. 1, January, 1923. This Journal is published by the Board of Trustees of the Buffalo General Hospital, Buffalo, N. Y. It is a well printed journal of 36 pages of solid reading matter and well illustrated.

At the coming annual meeting of the Ohio State Medical Association to be held in Dayton, Ohio, May 1st, 2d and 3d, the Eye, Ear, Nose and Throat Section of that Association has secured Dr. Robert Von Der Heydt, of Chicago, to deliver an address on "Slit Lamp Microscopy of the Living Eye, Its Aid to Histological Research, and as a Refinement in Ophthalmic Diagnosis." This subject is one of great interest to ophthalmologists, and the Ohio State Medical Association extends an invitation to the membership of the Medical Society of the State of Pennsylvania to hear this address on Wednesday, May 2d, at 9 a.m. Other special features of the program will include an oration on Public Health by Dr. Livingston Farrand, President of Cornell University; and an oration on Surgery by

Dr. Joel E. Goldthwait, of Boston. Both of these addresses will be delivered on the afternoon of May 2d.

The Seventh Annual Clinical Session of the American Congress on Internal Medicine will be held in the amphitheatres, wards and laboratories of the various institutions concerned with medical teaching, at Philadelphia, Pa., beginning Monday, April 2, 1923.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Dr. James M. Anders, of Philadelphia, is Chairman of the local Committee on Arrangements, and Dr. E. J. G. Beardsley, of Philadelphia, is Chairman of the Committee on Program.

Address inquiries to the Secretary-General, Dr. Frank Smithies, 1002 N. Dearborn St., Chicago, Ill.

The Doctor Sofie A. Nordhoff-Jung Cancer Research Prize.—Dr. Sofie A. Nordhoff-Jung, of Washington, District of Columbia, United States of America, has founded an annual prize of five hundred dollars bearing the title of *"The Sofie A. Nordhoff-Jung Cancer Research Prize."* This prize is destined for the encouragement of researches in the etiology, prevention and treatment of cancer. It will be awarded by a commission, composed of members of the University of Munich, Bavaria, and be granted for the first time in December of the year nineteen hundred and twenty-three. The commission consists of professors Borst, Doederlein and Sauerbruch with Professor von Romberg as chairman. This body is empowered to elect successors. The award will be made as a recognition of the most conspicuous work in the world literature bearing on cancer research, done at a time antecedent to the allotment of the award. Though the prize will not be awarded on a competitive basis the commission invites all research workers in cancer to submit literature on this subject.

Under the leadership of Herbert Hoover, Chairman of the American Relief Administration, a union of societies known as the American Child Health Association, has been formed for the protection and promotion of child health in America. This Association will put the full strength of the American Relief Administration behind a merger of two great national organizations at present doing work in America for children. One is the American Child Hygiene Association, which for thirteen years has been striving to improve conditions for the mother before and after childbirth, for the infant and for the pre-school child up to five years of age under the presidency of such men as Dr. Philip Van Ingen, of New York, Dr. Samuel McClintock Hamill, of Philadelphia; Dr. Henry L. K. Shaw, of Albany, N. Y.; Dr. J. H. Mason Knox, Jr., of Baltimore; Dr. S. Josephine Baker, of New York; Mrs. Wm. Bowell Putnam, of Boston, and finally of Mr. Hoover himself. The other is the Child Health Organization of America which, under the presidency of Dr. L. Emmett Holt, aims to have health taught in the schools as a positive, not a negative subject, and to make the teaching such a game as will engage the active interest of every boy and girl in America. Both have already done remarkably successful work which will now be greatly broadened. Earnestly supporting them will be the American Relief Administration, translating into service through the new Association the experience in organization and administration gathered in eight years from the time of the Belgian invasion, when it functioned under the name of the Commission for Relief in Belgium, through the years of reconstruction in Eastern and Central Europe and down to the present day in Russia.

The American Child Health Association will cover the whole cycle of child life prior to the period when the individual enters the industrial or college world. Such a work cannot be effected without the fullest coöperation of the local welfare agencies already functioning. It needs the active assistance of every parent, doctor, nurse, teacher, public health official and social worker in the country. The aim of the new Association, then, is to create what may be described, paradoxically, as a decentralized Child Health Union, by which we mean it wants every agency and every individual as a member of the national body, but not for the purpose of usurping or even directing local activities. On the contrary, its object will be to stimulate, when necessary, and to strengthen in every way possible the work now being done in the local communities. With that object in view it will have definite concrete aides to offer active members.

BOOKS RECEIVED

Diseases of the Ear, Nose and Throat—Medical and Surgical, by Wendell Christopher Phillips, M.D., Professor of Otology, New York Postgraduate Medical School and Hospital; Surgeon to the Manhattan Eye, Ear and Throat Hospital, etc. Sixth Revised Edition illustrated with 578 half-tone and other text engravings, many of them original; including 37 full-page plates, some in colors. Philadelphia: F. A. Davis Company, 1922. Price $8.00 net.

Transactions of the New Hampshire Medical Society at the One Hundred and Thirty-First Anniversary held at Concord, Wednesday and Thursday, May 17-18, 1922. Printed by John B. Clarke Co., Manchester, N. H.

Recipes for Institutions. Collected and edited by The Chicago Dietetic Association, Inc., in the interest of better food for the institution. New York: The Macmillan Company, 1922. Price $1.50.

Enlargement of the Prostate, its History, Anatomy, Etiology, Pathology, Clinical Causes, Symptoms, Diagnosis, Prognosis, Treatment; Technique of Operations, and After-Treatment. By John B. Deaver, M.D., LL.D., Sc.D., F.A.C.S.; John Rea Barton Professor of Surgery, University of Pennsylvania; Surgeon-in-Chief to the Lankenau Hospital, Philadelphia; assisted by Leon Herman, B.S., M.D., Urologist to the Methodist Episcopal Hospital, Philadelphia, etc. Second edition with 142 illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. Price $7.00.

The Successful Physician. By Verlin C. Thomas. M.D., Visiting Physician to Franklin Hospital, San Francisco, Octavo of 303 pages. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $4.00.

Dispensary Service in the United States, 1922. Reprinted with Additions from the Hospital Number of the Journal of the American Medical Association. Price $1.00.

Textbook of Pediatrics, edited by Professor E. Feer, Director of the University Children's Clinic, Zurich. Translated and edited by Julius Parker Sedgwick, B.S., M.D., Professor of Pediatrics, University of Minnesota Medical School, and Carl Ahrendt Scherer, M.D., F.A.C.P., Duluth, Minnesota. First edition in English; 262 illustrations. Philadelphia and London: J. B. Lippincott Company, 1922. Price $8.50.

Transactions of the Mississippi State Medical Association. Fifty-fifth Annual Session held at Brown's Wells, Hazlehurst, May 9-10, 1922.

Annual Report of the Surgeon General of the Public Health Service of the United States for the fiscal year 1922. Washington: Government Printing Office.

Feeding, Diet and the General Care of Children. A Book for Mothers and Trained Nurses by Albert J. Bell, A.B., M.D., Assistant Professor of Pediatrics in the Medical Department of the University of Cincinnati, etc. Illustrated. Philadelphia: F. A. Davis Company, 1923. Price $2.00 net.

Principles and Practice of Infant Feeding by Julius H. Hess, M.D., Professor and Head of the Department of Pediatrics, University of Illinois College of Medicine; Chief of Pediatric Staff, Cook County Hospital, etc. Third Revised and Enlarged Edition, illustrated. Philadelphia: F. A. Davis Company, 1922. Price $4.00 net.

BOOK REVIEWS

LECTURES ON DIETETICS. By Max Einhorn, M.D., Emeritus Professor of Medicine at the New York Postgraduate Medical School and Hospital; Visiting Physician to the Lenox Hill Hospital, New York. 12mo of 244 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $2.25. net.

A complete treatise on dietetics is not to be expected in a book of this size, made up, as it is, of seventeen lectures or magazine articles on varying aspects of the subject. There is somewhat of a tendency to sketchiness in handling the different topics, perhaps due in part to the author's colloquial style. This might lead in a lecture to a different understanding than the one the author wished to convey, as when he advises eating articles not easily digested and not eating too slowly. Also the advice in Lecture V to a group of laymen to be guided in their choice of diet by what their neighbors are eating suggests many exceptions. But in their context, as the reader sees them, these are wholesome, common-sense statements. The best sections of the book, as is natural in consideration of Dr. Einhorn's work and reputation are those on the diet in chronic affections of digestion, on the management of diabetes and on duodenal alimentation, and these alone are enough to commend it as a useful and valuable little book for the general practitioner. It is interesting to note that the author gives higher rank to the results of clinical observation than to the theories founded on physiological experiments.

Proof-reading errors are few, the main slips being "acquiescence" for "quiescence" and "temperature" for "fever." Alfred Hand.

ELEMENTS OF SCIENTIFIC PSYCHOLOGY. By Knight Dunlap, Professor of experimental psychology in the Johns Hopkins University, Baltimore; author of "Mysticism, Freudianism and Scientific Psychology," "Personal Beauty and Race Betterment," etc. C. V. Mosby Co., St. Louis, Mo., 1922.

This book may be an excellent résumé of the subject for the embryo psychologist, but it is compact and likely to prove pretty solid reading for the medical man. It is marred by a considerable number of technical and confusing abbreviations, being rather liberally sprinkled with initials like JPD's and JND's the QST and the PST, etc. Colloquialisms of the schoolroom, such as "maxwells," hardly look well in a serious treatise; and it is rather surprising, even to one with a limited knowledge of Latin, to find the students directed to pronounce such an obviously classical phrase as "minimum visible" as if the latter word were a French trisyllable with the accent on the ultima.

Nevertheless, the medical man will find much of interest in this volume. It may be news to him that there are at least fifteen senses instead of the traditional five, or seven. He will learn something of the precautions necessary in testing for color-blindness with worsteds. He will understand why microphonic apparatus helps some deaf patients more than others. He will realize what a large part the nose plays in tasting, if, for example, the taste proper of pineapple can be exactly imitated with a mixture of water, sugar, vinegar and alum.

These examples are taken from the first part of the book, which deals with sensation. It is followed by chapters on thought and thought content, on the anatomy and mechanisms of the living being, on reaction and consciousness, instinct and habit, perception and discrimination, thinking and reasoning, feeling and emotion, the ego. There is an appendix on mental deficiency and mental disease, and a well chosen bibliography of reference books for those who wish to delve more deeply into the separate topics.

Albert P. Brubaker.

THE MEDICAL CLINICS OF NORTH AMERICA. September, 1922. San Francisco Number. Vol. VI, No. 2. Philadelphia and London: W. B. Saunders Company.

The present volume contains articles as follows: Paroxysmal Tachycardia, Favorably Influenced by Quinidin, by Dr. A. W. Hewlett; Protein Restriction in Bright's Disease, by Dr. Thomas Addis; Diagnosis and Treatment of Gall-bladder Disease, by Dr. W. C. Alvarez; The Management of Diphtheria, by Dr. E. C. Fleischner and Dr. E. B. Shaw; The Influence of the Hydrogen-ion Concentration and Buffer Value of Foods on Digestion, by Dr. H. K. Faber and Dr. D. F. Hadden; Intestinal Protozoa, by Dr. M. C. Cheney; Syphilitic Aortitis, by Dr. E. S. Kilgore; Bacterial Asthma in Children, by Dr. S. H. Hurwitz; Fever of Long Duration, by Dr. L. H. Briggs; Myxedema in an Adult and in a Child, by Dr. H. Lisser; Diet in Certain Intestinal Conditions, by Dr. E. J. Best; A Clinical Comparison of Aplastic Anemia, Idiopathic Purpura Hemorrhagica and Aplastic Leukemia, by Dr. E. H. Falconer and Dr. L. M. Morris; Combined System-Disease, by Dr. R. W. Harvey; The Treatment of Leprosy, by Dr. H. E. Miller; The Radiûm Treatment of Carcinoma of the Mouth, by Dr. L. R. Taussig; Intestinal Protozoa in Clinical Practice, by Dr. A. C. Reed and Dr. H. A. Wycoff; Dermatopolyneuritis, Acrodynia, Erythredema, by Dr. L. Porter; Acute Yellow Atrophy Associated With Hyperthyroidism, by Dr. W. Y. Kerr and G. Y. Rusk. A. A. E.

MAY'S MANUAL OF THE DISEASES OF THE EYE FOR STUDENTS AND GENERAL PRACTITIONERS. Tenth Edition. Published by Wm. Wood & Co., New York City.

The popularity of this very excellent manual is attested by the numerous reprintings of the various editions, and its many translations in foreign languages. As in previous editions the many colored plates (twenty-two in number) are of most excellent assistance in affording the general practitioner a means whereby he is aided in making a diagnosis. Chapter twenty-seven on the "Ocular Manifestations of General Diseases" is of especial value and serves to point out the necessity for coöperation on the part of the general practitioner and the ophthalmologist. The press work, paper and binding are all very good, and the entire work merits its continued success.

G. H. C.

DISEASES OF THE THYROID GLAND. By Arthur E. Hertzler, M.D., F.A.C.S., Professor of Surgery in the University of Kansas School of Medicine; Surgeon to the Halstead Hospital, Halstead, Kansas; Surgeon to St. Luke's Hospital and St. Mary's Hospital, Kansas City, Mo., and to Provident Hospital, Kansas City, Kansas: with a Chapter on Hospital Management of Goiter Patients by Victor E. Chesky, A.B., M.D., Associate Surgeon to Halstead Hospital: with 106 original illustrations, 245 pages. Published by C. V. Mosby Co., St. Louis. Price $5.00.

In the first part of the book the author reviews the usual etiological factors that are considered to play a part in the production of goiter, without revealing his favorite theory. In the second chapter the normal and pathologic anatomy is excellently brought out. This chapter would be especially useful to the student beginning a study of the thyroid gland, and could well be used as corollary to a textbook of pathology. The chapter on symptomatology bears one or two points worthy of emphasis, namely, an appreciation of the frequent myocardial damage incident to toxic goiter and the occasional damage due to mechanical obstruction. The section on basal metabolism leaves one to infer that the author has but little faith in the procedure as a diagnostic measure. In this respect his opinion is at variance with that of the leading students of the subject, and a diagnosis of toxic goiter might well be questioned, even in those with their "eyes hanging on their faces," where the basal metabolic rate is normal, the report coming from a reliable laboratory.

Under hospital management of the goiter patient the subject of diet is well handled. Lactose lemonade, 50 gms. to the glass, is recommended both before and after operation, and the feeding is started early after the operation.

The chapter on Topographic Anatomy is well illustrated and would be of value to the surgeon first attempting thyroid operations.

Under the subject of anesthetics it is disappointing to find that nitrous-oxid-oxygen is passed without consideration, as this is the form of anesthetic employed in practically all clinics doing modern thyroid surgery. The use of novocain is well detailed, but to rely on this anesthetic alone for the highly toxic patient must necessarily lessen the efficiency of surgical therapy. There can no longer remain a doubt that there is less nervous strain, for the patient, when the operation is performed under gas and novocain than when novocain alone is used.

There are many commendable features about the book. It shows the results of extensive and accurate clinical observations. The illustrations by Tom Jones are quite deserving of praise. But, on the whole, the book is disappointing. It has, perhaps, added nothing to our knowledge of diseases of the thyroid, and, should the inexperienced surgeon start out to follow the book in his practice, he would be several years behind the times. To think of a clinic doing thyroid surgery without gas anesthesia and an up-to-date metabolic laboratory carries one back several years.

C. E. Ervin.

CLINICAL MEDICINE; Tuesday Clinics at the Johns Hopkins Hospital. By Lewellys F. Barker, M.D., L.L.D. Philadelphia: W. B. Saunders Company, 1922.

In this volume the author undertakes to present a method of teaching clinical medicine which has made the School of Medicine of Johns Hopkins University world renowned. It reveals the plan by which the medical student *works with his teacher* in the study of the patient. This principle was the corner stone upon which Prof. Osler, the first occupant of the Chair of Medicine at Hopkins, built that structure which has had such a salutary influence upon the teaching of medicine in America. No one could describe this method of teaching better than can Dr. Barker, who was a student of Osler and who afterwards succeeded him as the occupant of the Chair of Medicine at Hopkins.

The book is of particular value to the teacher of medicine, though it may be read with profit by any physician who wishes information on the means and methods of arriving at a diagnosis.

In his introductory clinic Dr. Barker discusses the principles of diagnosis, and presents five steps which are necessary before one can arrive at a diagnosis. He says, "First, we must feel a difficulty; second, we must collect data that will localize and more clearly define our problem; third, we must brood over the facts and allow suggestions of the solution of the difficulty to occur to us; fourth, we must reason out the implications of these suggestions; and lastly, we must compare the actual facts with the implication of the suggestions, to see if identity with some one of them exists." In developing these steps the author shows the necessity for balancing the case record in such a way as to include history, physical and psychical examination, laboratory tests, including x-ray, and finally special examinations, such as of the eyes, the teeth, estimation of metabolic processes, etc. All of these points are fully discussed and every care is shown to prevent the student or physician mistaking the form for the real substance. This is brought out all the more clearly in the presentation of patients at the clinics. These represent some thirty diseases.

In his presentation of cases Dr. Barker shows plainly that the *large clinic* still has its place in the teaching of medicine. Anyone interested in the teaching of medicine who may have been so fortunate as to have visited Dr. Barker's Clinic will surely bear testimony to the fact that the large clinic gives the opportunity of carrying inspiration to the student in such a way as no other method of teaching can. This statement is not contradictory to the fact that the greatest progress in medical teaching in recent years has been in the direction of individualizing, by breaking classes up into small groups and having closer contact between teacher and student. Dr. Barker's *Clinical Medicine* shows convincingly what of good in the old system of teaching should be retained and become a part of the so-called new method of teaching.

In this volume the author discusses in a clinical way certain diseases of an infectious nature, certain diseases of the respiratory apparatus, and also the circulatory, the digestive, and the blood-making apparatus. He covers these subjects in about fifteen clinics. The remaining seventeen clinics of the year are devoted to diseases of the urogenital system, to diseases of muscles, bones and joints, to diseases of the nervous system, to diseases of the glands of internal secretion, and to diseases of metabolism.

Throughout the entire volume, containing about 600 pages, the author gives evidence of that versatility in the knowledge of the disease, taken from every standpoint, which marks him as one of the great clinicians and teachers of this country at this time.

At the close of each clinic the author gives selected references to the literature bearing upon the subject presented. This in itself enhances the value of the book which should be in the hands of all clinicians, especially of those who enjoy the privilege of teaching.

John A. Lichty.

THE MEDICAL CLINICS OF NORTH AMERICA. New York Number, November, 1922. Volume 6, Number 3. Philadelphia and London: W. B. Saunders Company.

This interesting and instructive volume of the Clinics contains articles dealing with subjects as follows: The Progressiveness of Diabetes, Treatment of Arterial Hypertension, by Dr. F. M. Allen; Maintenance of Diet in Diabetes Mellitus, by Dr. H. O. Mosenthal; Potentially Diabetic Persons and Dietary Control, by Dr. J. W. Sherrill; Renal Functional Tests, by Dr. L. Buerger; Diseases of the Aorta and Aortic Valves, by Dr. E. P. Boas; Heart Disease During Pregnancy and Labor, by Dr. H. E. B. Pardee; Pernicious Anemia, by Dr. C. M. Guion; Pernicious Anemia, by Dr. R. Ottenberg; Diarrhea, by Dr. J. L. Kantor; Congenital Pyloric Stenosis, by Dr. M. H. Bass; Postpneumonic Osteomyelitis of the Pubic Bone, The Sixty-Six Pulse, by Dr. J. G. M. Bullowa; Chronic Infectious Arthritis, by Dr. R. L. Cecil; The Tonsils in the Tuberculous, by Dr. M. Fishberg; Early Diagnosis of Tuberculosis, by Dr. G. G. Ornstein; Brain Tumor, by Dr. W. M. Kraus; Common Pituitary Syndromes, by Dr. A. S. Blumgarten; Cortical Anesthesia, by Dr. H. A. Riley; Eczema and Asthma in Infancy and Childhood, by Dr. B. Ratner.

A. A. E.

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ORIGINAL ARTICLES

SYMPOSIUM ON GOITER

BASAL METABOLISM*†

C. E. ERVIN, A.B., M.D.
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It is my intention to review briefly with you the subject of basal metabolism. Certainly no symposium on the subject of goiter would be quite complete without some thought being given to this phase of the question. While the test, as a rule, is not absolutely essential in establishing a diagnosis of toxic goiter, it does add refinement to our knowledge of the disease and is surely worthy of routine employment in any clinic doing thyroid surgery. Reports of the basal metabolic rate, like most laboratory investigations, must be interpreted by aid of the clinical manifestations.

The basal metabolic rate is the minimum heat production of an animal, and is usually expressed in calories per sq. m. of body surface per hour at 0° C. and 760 mm. of mercury pressure. The determination may be made by a calorimeter, an apparatus which actually measures the heat elimination of the body, or by calculation from the gas exchange. The former is known as direct calorimetry, the latter as indirect. Direct calorimetry requires the use of a calorimeter, an expensive and complicated apparatus, and the services of two or three highly trained observers. Indirect calorimetry, using the oxygen consumption as a basis, is just as reliable, as has been shown by Benedict of the Carnegie Nutrition Laboratory in Boston, and can be done with a respiratory apparatus, obtained at a relatively low cost and operated by one trained technician.

It is well worth our time to stop here for a brief review of the development of the subject of calorimetry. Professor Graham Lusk[1] of the Russell Sage Institute of Pathology, New York City, has given us an excellent account of this development. The first interest in the subject dates back to 1870, when Lavosier, enthused over the then newly discovered oxygen, propounded the novel theory that the process of life consisted in oxidation with consequent heat production. Regnault and Rieset in 1850 designed a closed apparatus in which an animal was placed and the carbon dioxid removed by pumping the respired air through potash containers and oxygen added as required. This apparatus is the direct parent of the closed circuit system used to-day. In 1862 Pettenkofer and Voit completed their historical apparatus with which they could determine the carbon dioxid output of man. In 1866 Voit began determining the amount of heat which should arise from the oxidation of substances in the body and in 1885 Rubner, in Voit's laboratory, published results concerning the calorimetry of food, which have remained to this day the standard for heat values of proteins, carbohydrates and fats.

The first successful respiration calorimeter was built by Rubner in 1894. To this calorimeter Rubner attached a Pettenkofer respiration apparatus whereby it was made possible to determine the carbon dioxid output of the animal, so that indirect could be compared with direct calorimetry. Rubner determined from the nitrogen in the urine and feces of a dog fed on meat and fat (N. × 6.25) the amount of protein utilized. Each gram of protein yields 4.1 calories of heat when oxidized; consequently the heat produced from protein could easily be determined. In order to obtain the amount of heat derived from the fat, the amount of carbon excreted in the urine, feces, and expired air was determined, and from this was subtracted the amount of carbon contained in the protein destroyed (N. × 3.28). Since fat contains 76.5% of carbon and one gram of fat yields 9.3 calories, the following formula would give the caloric value of the fat consumed: Total $C - (N. \times 3.28) \div 76.5 \times 100 \times 9.3$. Rubner found the heat derived from the protein and fat was exactly the same as measured by the calorimeter and, as Prof. Lusk says, "this was the first long-sought demonstration of the law of the conservation of energy as applied to animal life."

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

†From the Department of Internal Medicine of The George F Geisinger Memorial Hospital, Danville, Pa.

Atwater, for a time associated with Voit and Rubner in Germany, after returning to America, began work on a calorimeter which would measure the heat production in man. Rosa, a physicist, was associated with Atwater. Their calorimeter demonstrated that direct and indirect calorimetry agreed in man, during periods of mechanical work as well as when at rest. The original apparatus measured only the carbon dioxid, but the Carnegie Institute later gave Atwater funds to apply a closed circuit of Regnault and Rieset, so that oxygen consumption could also be determined. Consequently Atwater was able to determine the respiratory quotient for different foods. F. G. Benedict became associated with Atwater in the Carnegie Nutrition Laboratory in 1895 and he is now the controlling genius of that institution.

The next move of major importance was the construction of a respiration apparatus by the Russell Sage Institute of Pathology associated with the Bellevue Hospital, New York. This work was ably done by Prof. Graham Lusk, Dr. Eugene F. Du Bois, and their associates. The thirty or more papers[2] tell of their excellent work on metabolism in health and disease.

As a result of the extensive studies made by Benedict and his coworkers at the Carnegie Nutrition Laboratory and by Gephart and Du Bois[3] [4] [5] it has been shown that the methods of indirect calorimetry are perfectly reliable and compare favorably with the direct determinations. Carpenter[6] has shown that for indirect determinations two types of apparatus are suitable, the closed circuit and the gasometer.

The latter is often called the Tissot or more properly the respiratory valve apparatus. The expired air is collected in a spirometer for a given period, measured, sampled and the composition determined by a Haldane gas analysis apparatus. This method is highly technical and requires the services of an expert gas analyst who is constantly doing this work, but is very reliable when properly manned.

The respiration apparatus of the Benedict type enjoys the widest clinical employment. This is a closed circuit system, the patient breathing into and out of a confined volume of air. An electrical blower forces air through soda lime, where the carbon dioxid is absorbed. Oxygen is absorbed in the lungs, the amount being represented by the displacement in the volume of the respired air. The spirometer serves the twofold purpose; that of an expansion chamber, and as a graduated container for the oxygen. The expired air is led from the patient to the spirometer by the larger rubber tube, from which it is forced by the blower through the purifying bottles, to be returned to the patient in the smaller tube. The patient is connected with the apparatus by means of a 3-way valve. Either a mouthpiece and nose clip are used or perhaps what is better, in extremely toxic cases, a Tissot mask. Two to three liters of oxygen are added to the spirometer, the motor started and the machine tested for leaks by putting a 100 gm. weight on top of the bell. The apparatus is then ready for use.

PREPARATION OF THE PATIENT

In order to meet with basal levels, the patient must be examined in the postabsorptive period, i. e., 12 to 18 hours after the last food was taken and after a period of 20 minutes to a half hour rest. The patient should be freed of apprehension by making one or more trial trips to the metabolic room, where she becomes familiar with the apparatus and acquainted with the observer. After the period of rest the patient is connected with the machine and at the end of a normal expiration the 3-way valve is turned so as to cause the patient to breathe into and out of the apparatus. As soon as the respirations have become regular, the test is started—the spirometer reading, the pulse rate and respirations are recorded, as well as the temperature of the enclosed air. Readings should be taken every four or five minutes throughout the test, as in this way discrepancies in the rate of oxygen absorption are quickly detected. The time of the experiment may run 10 to 15 or 20 minutes, depending upon the patient. If you can get only one fifteen-minute period with three five-minute checks, you are safe in making the calculations. If less than one fifteen-minute period, there should be two ten- or twelve-minute periods.

CALCULATIONS

Several methods are satisfactory and little difficulty is attended by any of them. For the general usage, however, I feel it is best to avoid the use of logarithms. The following method was passed on to me through the kindness of Dr. Jonas of the Pepper Laboratory at the University Hospital, Philadelphia. The amount of oxygen, expressed in liters, consumed during the test, is multiplied by 60 and divided by the duration of the period. This gives the liters of oxygen consumed per hour. This figure is now corrected for O° C. and 760 mm. mercury pressure. The corrective figure is easily obtained from Table No. 1, which is taken from Aberhalden's Handbook No. 3, page 589. You will note in the first column the temperature and in the others the figures for different barometric pressure. Say a temperature of 22 and barometric pressure of 29.50 will give a corrective factor of .886. Multiply the oxygen consumed in one hour by this figure and you have the oxygen per hour at O° C. and 760 mm. mercury pressure. The next step is to determine the calorific value of this oxygen. You will recall that the calorific value of the oxygen consumed depends a great deal upon the sort of food oxidized. For example, when carbohydrate is burned, the volume of oxygen absorbed is equal to the amount of carbon dioxid eliminated. The respiratory quotient is then one and the calorific value of one liter of oxygen would be 5.047 calories. When fat is oxidized, however, the respiratory quotient is 0.70 and the calorific value of one liter of oxygen is only 4.686. We now know that under basal conditions the proportion of fat and carbohydrate (COH 38.8 – Fat 61.2) is such as to give an average respiratory quotient of .82 or a calorific value of 4.825 to the liter of oxygen.

TABLE NO. I

(Aberhalden Handbook No. 3, page 589)

Bar. Pres.	29.1	29.5	29.9	30.3	30.7
To 16° C.	.740	.750	.760	.770	.780
17	.896	.908	.920	.932	.945
18	.892	.904	.915	.928	.940
19	.887	.899	.911	.923	.936
20	.882	.894	.906	.919	.931
21	.878	.890	.902	.914	.926
22	.873	.886	.898	.910	.922
23	.869	.881	.893	.905	.917
24	.864	.876	.888	.900	.912
25	.860	.872	.884	.896	.908
26	.855	.868	.880	.891	.903
27	.850	.863	.875	.887	.899
28	.845	.858	.870	.882	.894
29	.840	.852	.864	.876	.889
30	.835	.847	.859	.871	.884
31	.829	.842	.854	.866	.878
32	.824	.838	.848	.861	.873
33	.818	.833	.843	.855	.867
34	.813	.825	.837	.850	.862

TABLE NO. II

Standards of Normal Metabolism

Average Calories per hour per sq. m. of body surface (DuBois).

Age Years	Males Cals.	Females Cals.
14-16	46.0	43.0
16-18	43.0	40.0
18-20	41.0	38.0
20-30	39.5	37.0
30-40	39.5	36.5
40-50	38.5	36.0
50-60	37.5	35.0
60-70	36.5	34.0
70-80	35.5	33.0

To return now to the calculations: The amount of oxygen consumed per hour at O° C. and 760 mm. of mercury pressure is multiplied by 4.825 which gives the total calories per hour. In order to determine the total calories per hour per sq. m. of body surface, this figure is divided by the height-weight, formula of Du Bois. The difference between this figure and that for the normal (Table No. 2) for age and sex is determined and the difference divided by the normal. This gives the percentage above or below normal.

INTERPRETATION OF FINDINGS

Reports of basal metabolic rates, like all laboratory investigations, must be interpreted by aid of the clinical manifestations. I may report to you a basal metabolic rate of plus 50 in two patients. One patient may have safely passed through a crisis and would be a fit subject for surgical therapy, whereas the second patient may be approaching an exacerbation and would be a poor surgical risk. We must always keep in mind the fact that numerous conditions, such as fever, certain cases of myocardial insufficiency, acidosis, etc., will cause an increase of the basal metabolism, a rise of one degree in temperature causing an increase in the basal metabolic rate of 7½%. Ruling out these conditions, an increase of the metabolic rate indicates an increased thyroid activity.

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BASAL METABOLISM

Its Application to Disorders of the Thyroid*

STANLEY D. CONKLIN, M.D.

SAYRE, PA.

During the last half century the medical world has acquired many aids in the diagnosis and treatment of conditions. Among the more recent additions we have one which places endocrinology still another step forward, namely, basal metabolism.

By basal metabolism we mean the minimal amount of heat production under standard or basal conditions. Accepting the theory that the hormone of the thyroid when in excess causes an increased heat production, and knowing that by the method of indirect calorimetry, the basal metabolism apparatus, we are able to calculate the amount of heat production in an individual during a certain period of time, we can readily determine whether or not the metabolism is normal, plus or minus in any given case.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

Basal metabolism has found its greatest value in work referable to the thyroid gland, and in this it not only gives us a definite functional test of thyroid activity, but is also of great aid in the diagnosis, prognosis and treatment of thyroid disorders.

It is my purpose this afternoon in the brief time allotted for this demonstration to discuss some of the practical points in the performance of basal metabolism tests which have been derived from having performed a large series of tests on goiter patients at the Robert Packer Hospital since April, 1920.

PREPARATION OF THE PATIENT

The test should be done after a good night's rest in the hospital and a fast of from 12 to 14 hours; that is, early in the morning between 8 a. m. and 10 a. m. if possible. Some men allow water to be taken in the morning not later than 6 a. m. As little muscular exercise as possible is preferable. Patients should be taken to the metabolism room on a stretcher or in a wheel chair, and after obtaining the height and weight, a rest of 30 to 45 minutes on the cot should be allowed before beginning the test. Patients coming to the hospital by automobile, street car or otherwise should rest at least one hour. For the past year I have made it a practice to see during my evening rounds all cases who are to have the metabolism test the following morning, and give them a brief explanation of the test, emphasizing the fact that, while it is something unfamiliar, there is nothing to be feared, and that it is simply a breathing test. Meeting the patient, especially one nervous from an overactive thyroid, eliminates the nervousness so frequently encountered at the first test.

The patient is instructed to breathe as naturally as possible and to avoid forced expiration in an effort to overcome the slight resistance of the apparatus. Obese persons and those with marked thyroid enlargement are given special attention as to posture, the head being elevated and the patient placed in as comfortable a position as possible.

Repeating the test on the second and third days is good technic, as not infrequently high ratios are encountered in the initial readings. I find the results of the second and third tests usually vary only two or three points, while the first and second may show a difference of from 10 to 15 points.

The room temperature should be about 20 C. Patients are warned not to move during the test.

PERFORMANCE OF TEST

The spirometer is filled about one-fourth full with air, and twice as much oxygen is added from the tank. By using the blower for a few minutes an even mixture is obtained. The motor is now allowed to run for three minutes to determine if there is any leakage of oxygen about any of the valves. After the half-hour rest period the sterilized mouthpiece is placed in the patient's mouth and connected with the apparatus, being careful to make it comfortable, and asking the patient to keep the lips tightly closed about the rubber. The nostrils are closed with the nose clip and the patient allowed to breathe from the outside air for a few moments in order that he may become accustomed to breathing through the mouthpiece. After the breathing has become regular the valve is turned so that he breathes from and into the spirometer bell. Waiting from two to three minutes for him to become accustomed to breathing from the spirometer bell, a reading is taken at the height of expiration, the time noted, and the temperature from the thermometer in the spirometer bell is read and recorded. Likewise the pulse rate and respiratory rate are noted. The patient then breathes from the apparatus for ten minutes, when the reading at the height of an average expiration is again recorded, as well as the temperature, pulse and respiration. During this time the pulse and respiration should be taken every two minutes. While the patient is breathing from the apparatus the blower is blowing the air through a bottle of soda-lime to take out the CO_2, so that the difference between the volume in the tank at the beginning of the experiment and the end represents the amount of oxygen consumed. The average actual consumption per minute is then obtained, and after corrections for barometric pressure, temperature, age and sex, the normal consumption for an individual of that known height and weight is ascertained, and by comparison of the two the basal metabolism rate in that particular case is determined.

Having obtained a basal metabolic rate, the next step is the interpretation of the same. First of all one must be sure that there were no errors in the technic employed and that the test was obtained under absolute basal conditions. For instance, a high rate might be due to a fever that the patient had which was overlooked on account of failure to record the temperature previous to starting the test. A very careful history and thorough physical examination are vastly important. Repetition of the test on subsequent days should always be the plan of study. A normal standard is necessary, and the one generally accepted is from minus 10 to plus 10.

Again, a classification of cases according to metabolic rates is both valuable and instructive and the one given by Frazier and Adler[1] is very satisfactory, which is as follows: Group 1, 10 to 20 plus; group 2, 20 to 40 plus; group 3, 40 to 60 plus; group 4, 60 and above.

The class under which the rate comes gives an index, to a certain degree, to the kind of treatment to be advised. For instance, with a rate of plus 40 or below, surgery is without danger; but with a rate of plus 60 or above, absolute rest and waiting for the metabolic rate to become lower, together with an improvement in the general physical condition of the patient, is the safest procedure to adopt. With an improvement in symptoms but a tendency for the metabolic rate to become higher, conservatism to the fullest extent will yield better results.

INTERPRETATION OF FINDINGS

In interpreting the significance of abnormal metabolism findings in patients, we must correlate them with all clinical findings and weigh their probable importance in comparison with every other sort of evidence in any given case, just the same as we should do in interpreting any other laboratory or special finding, as the Wassermann test, x-ray, blood sugar, and the like.[2]

In the study of basal metabolism it is important to remember that like all physiologic processes either in normal or pathologic conditions it is subject to wide variations. All abnormal basal metabolic rates are dependent on or accompanied by an altered function of the thyroid gland.

Basal metabolism plays a very important part in the differential diagnosis of borderline cases. Accepting the definition of hyperthyroidism as a clinical syndrome resulting from the presence in the body tissues of an excessive amount of thyroxin causing increased heat production and the conception that the basal metabolic rate serves as a fundamental classification of disease,[3] it is easily conceivable how a very sharp distinction can be drawn between mild exophthalmic goiter and simulating conditions such as "effort syndrome," "cardiac neurosis," "nervous irritability," "neurasthenia," which on superficial examination present many of the symptoms and signs of mild exophthalmic goiter, but in which the basal metabolic rate is found to be normal and on a thorough investigation can be demonstrated to be independent of an excess of the thyroid hormone. It often occurs in the regions of endemic goiter that these cases are accompanied by a colloid enlargement of the thyroid gland, with no apparent relationship, and it is for this reason that the basal metabolic rate is of such important diagnostic value.

Peabody, Weaner and Tomkins[4] found in fifty-three soldiers with rapid heart action, nervous irritability and physical inferiority, that hyperthyroidism was diagnosed in twenty-four. These twenty-four showed a normal basal metabolic rate, disproving the diagnosis. Here again, far more important than a palpable goiter are a careful history of the case and the character of the symptoms. Also, more than one metabolic rate should be obtained, as the first result is apt to be above normal while subsequent ones will be within normal limits. An increase of the metabolic rate in a neurotic individual means that the test was not done under basal or standard conditions.

It must always be borne in mind that symptoms such as nervousness, tachycardia, loss of weight, etc., while accepted as pathognomonic of the thyroid syndrome, may be due to conditions of the most diverse character. Nervousness, malnutrition from any cause, overwork, tuberculosis or syphilis could be possible causes of such a symptom group. Clinically, these cases can be diagnosed with a certain degree of accuracy from thyrotoxic cases, but as regards the thyroid problem, definitely and accurately. An estimation of the metabolic rate must be made which will furnish us with a reliable proof either for or against the existence of thyroid disease.[5]

The basal metabolic rate is of great value in studying the course of hyperthyroidism. An increase in the metabolic rate means a parallel increase in thyroid activity. While the basal metabolic rate gives us an indication of the thyroid activity, yet it does not tell us whether or not that particular case will safely undergo a surgical operation, just as in a case of pneumonia, the higher the temperature, the greater the mortality, and the same is true of the rate of metabolism. All patients with the same rate do not present the same clinical picture, some being extremely nervous, others in crises, yet others show little physical disturbance. Nevertheless the basal metabolic rate serves as a valuable criterion in deciding on the best type of operative procedure.[6]

The basal metabolic rate is also of value in the diagnosis of myxedema and hypothyroidism. Again one must remember that low rates are also encountered in inanition and hypopituitarism. In the treatment of hypothyroidism the basal metabolic rate is of the utmost value. In these cases it is the purpose to give either by mouth or intravenously a sufficient dose of thyroid extract or thyroxin daily to bring the basal metabolic rate to normal and to maintain the patient at the normal level by a proper daily dosage. To accomplish this frequent repeated basal metabolic rates must be obtained until the proper dosage has been accurately found. As time goes on the interval between tests can be greater.

The same procedure holds true for treatment of certain selective cases of goiter by the x-ray. Here the improvement can be checked up by the metabolic rate. The test should be done after every four to six treatments, one week apart and not sooner than one week after the last treatment.

In severe hyperthyroidism or exophthalmic goiter where it is necessary to resort to ligation, the basal metabolism test again gives an index to the improvement. It is the method in our clinic in these cases, if the basal metabolic rate remains high after ligation for any length of time, to send the patient home for a period of absolute rest, to return at definitely stated intervals for metabolic tests, so that, when the metabolic rate has become sufficiently reduced and satisfactory improvement has been made in the patient's general condition, with more or less subsidence of symptoms, operation can be advised with much less risk.

SUMMARY

(1) Basal metabolism is the measurement of heat production in an individual under standard conditions and gives us an index of the amount of thyroid activity.

(2) Patient should be in postabsorptive period and be given an explanation of the test.

(3) An attempt should be made to eliminate the slightest technical and physiological errors.

(4) Basal metabolism is of the utmost value in clinching the diagnosis of certain borderline cases.

(5) It serves as a therapeutic guide and affords a method of clearly visualizing the progress of patients with thyroid disease.

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ADENOMATOUS GOITER*

DRY CLINIC

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Adenomata of the thyroid manifest themselves by single or multiple enlargements usually harder than the surrounding tissues, except in cases of their becoming cystic, when they are softer. Occasionally they undergo calcareous change, and rarely they may become malignant. They cause more asymmetrical enlargement than any other condition of the gland.

The symptomatology in the early stages is practically nil. Later there is a sense of fulness about the neck, and if situated in certain locations in the gland, pressure symptoms develop.

The great danger from these simple growths is the development of hyperthyroidism.

Plummer, of the Mayo clinic, has found that 23% of these cases develop toxic symptoms, but not until the goiter has been present about 16 years, thus bringing these patients above the age of 30 years before they present any serious toxic symptoms.

There are two theories as to the causation of this toxicity. One is that the adenomatous tissue itself assumes functional activity. Marine and Graham have shown that adenomata perform the thyroid function. The other theory is that the adenomata by their presence cause stimulation of the normal gland tissue and thus produce over-secretion.

The patient whom you see here to-day, Mrs. A. C., age 50, married, is the mother of three children, all living and well. She first noticed an enlargement of her neck twenty years ago. It started on the right side and grew slowly, presenting no symptoms except for the tumor mass. Three years ago she began to get nervous and have palpitation of the heart. She also noticed herself getting tired more easily and to have some loss of weight. All these symptoms have gradually increased in severity.

This mode of onset is in marked contrast to the rapidly increasing severe hyperthyroidism of exophthalmic goiter. In the former the cardiovascular system suffers most, while in the exophthalmic type, the nervous system is the chief sufferer The period of onset of the latter type is much shorter, usually averaging about a year and a half.

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Examination of this patient reveals a nodular enlargement of her thyroid on the right side and in the midline. The mass is freely movable, and moves up and down during deglutition. There is a slight tremor of the fingers. She has a pulse of 90, which intermits occasionally. The heart sounds are clear, no evidence of valvular or myocardial lesion. She has a blood pressure of 160 systolic, and 78 diastolic. Her basal metabolism is plus 49. Her urine analysis shows a small amount of albumin and a few hyaline casts.

Treatment: Since we know that this type of goiter does not produce symptoms at the time of life that they usually develop, and since we also know that the thyroid gland is very essential at that particular time of life, it is best not to operate on young persons unless the goiter is of large size or causes pressure symptoms.

We also at this time of life face the possibility of recurrence because small nodules of adenoma too small to be seen or palpated will be left behind and undergo enlargement.

Surgery should be advocated, therefore, in patients over thirty, and before they begin to develop hyperthyroidism.

In cases in which hyperthyroidism is present to a marked degree preoperative treatment should be carried out, consisting of absolute rest in bed, plenty of water and digitalis to steady the heart. Preliminary ligation does not seem to do the good that it does in exophthalmic cases.

The operation should be a subtotal thyroidectomy with a removal of the isthmus and a resection of both lobes, leaving gland tissue posteriorly amounting to the equivalent of one-third of a normal sized lobe on each side.

This bilateral removal should be done even if the enlargement is all on the one side, for if the affected side alone is removed, the remaining half is very apt to undergo hypertrophy and cause the patient to feel that there is a recurrence.

Very light anesthesia (analgesia), preferably gas-oxygen, and local anesthesia (½ of one per cent novocain) should be used.

The after treatment should include plenty of liquids, especially water and again digitalis if necessary.

Patients should be told to guard against severe mental or muscular strain if of the hyperthyroid type for from six months to one year.

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EXOPHTHALMIC GOITER*

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The patient, Miss G. B., is nineteen years of age. Her father and mother are both living and well. There are six other children, all healthy, the oldest being twenty-one and the youngest ten years of age.

She had a mild attack of scarlet fever at the age of ten, but was not confined to bed. For the past year she has been treated for nephritis. She has been fitted with glasses to relieve a headache and pain in the eyes, but has obtained no relief. Menstruation is regular and lasts four days. She has a good appetite.

Present Illness: Her mother states that her daughter has been nervous for about ten years, and dreads to go about in public or attend amusements. Due to this she has followed no outside occupation, preferring to stay at home. For the past year her nervousness has greatly increased and there has been a considerable loss in weight. She tires easily, and on exertion becomes breathless.

Physical Examination: She is fairly well nourished. Exophthalmus is present, which is somewhat more marked in the right eye. The thyroid is enlarged. The lungs are normal and there are no cardiac murmurs or signs of dilatation. Tremor is present but not marked. Blood pressure — diastolic 80, systolic 130. Urine shows a specific gravity of 1,004, a heavy trace of albumin, and no sugar. Unfortunately there has been no estimate of the basal metabolic rate.

Diagnosis: The diagnosis of this disease should not be difficult as there is a certain definite group of symptoms. Nervousness and tremor are found in over ninety-five per cent of the patients, palpitation and tachycardia in about eighty per cent, and loss of weight and strength in about ninety per cent, while exophthalmus occurs in over seventy per cent. There is some dilatation of the heart in about sixty per cent of the cases, a soft presystolic murmur occurring in about half of these. Edema, vomiting and diarrhea occur late in the disease. Cabot points out that diabetes is the only other disease in which the patient loses weight and strength while retaining a good appetite. The objective symptoms alone would enable one to make the diagnosis in this patient. The urinary findings show that she also has some parenchymatous nephritis.

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Treatment: In the patient presented here, the course of the disease is chronic, and there have been no signs of an acute exacerbation. The heart is in good shape and her general condition is fair. Despite the urinary findings I would recommend, after a week's rest in bed, that she have a resection of both lobes. The operation is better done now to save the kidneys from the further toxic action of the thyroid. On the other hand if this girl presented another phase of the disease in which there is a general flare-up of all the symptoms, with a sudden increase in the pulse rate, and became very nervous and irritable, with a basal metabolism rate increasing, it would be unwise to do any operating whatever. In that case she would be put to bed, given sedatives, a forced diet with increased fluids. Usually in several weeks, these active symptoms subside, and the operation would not be performed until a month or two later.

Had she come to us in the advanced stage of the disease there would still be a difficult problem. In that case we would have to consider the damage already done to the heart, kidneys and nervous system, and the general toxic condition of the patient. This would be shown by a rapid, weak pulse of 130 or over, cardiac dilatation, extreme nervousness and irritability. Knowledge of the basal metabolism rate here is of great value, and should it exceed 40 per cent, it will require good surgical judgment to apply the proper treatment.

Estimation of the basal metabolic rate serves two purposes: first, as an aid to diagnosis, and second, it shows the degree of toxicity with which the patient is suffering at the time taken. It must be remembered that it does not show the amount of damage that has already been done to the heart, kidneys and nervous system, so that a decision as to whether or not the patient shall be operated upon rests largely upon the physical examination and history.

Some of these patients will not even stand ligation and nothing can be done until such time as they show improvement. In others, ligation of one upper pole, followed by the other in about eight days, may be attempted. These patients usually show great improvement and thyroidectomy can be performed in about three months.

For the inoperable cases we can only recommend rest, diet, sedatives, digitalis and x-rays.

The operation for exophthalmic goiter is more difficult than for the other types. In advanced cases the gland is very friable, the vessels numerous and large, even in the capsule. This makes the hemorrhages severe. Hemostats placed on the capsule simply fall out and create more hemorrhage, so no time should be wasted in separating the gland from the surrounding tissues and dislocating it, in order that the main vessels may be clamped.

Postoperative Treatment: Immediately after the operation these patients should be given saline or glucose solution by rectum, and water by mouth as soon as they are able to retain it. Sufficient morphine is given to allay the pain and quiet restlessness. They should be kept in the hospital for two weeks and on their discharge should be advised as to their mode of living, environment, work and general care of themselves.

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COLLOID GOITER*

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This form of goiter, which is often met with in practice, is thus termed because its main characteristic is an accumulation of thick tenacious colloid in follicles of the organ, in isolated lobules, lymph spaces and even the whole organ. In the average case, the gelatinous colloid so overfills the follicles that the goiter is lobulated and hard. It is probably an advanced stage of the softer goiters, both diffuse and nodular and may be distinguished from them through its relative hardness and the fact that it does not become reduced under pressure, owing to the escape of a part of the fluids in the neighboring tissues, as do some of the softer growths.

Plummer states that "Diffuse colloid may be considered an anatomic expression of functional disturbance in prenatally developed thyroid acini. The thyroid is subject to the laws of rest and repose; it stores thyroxin, iodin and colloid, and during periods of stress it absorbs a portion of the colloid, utilizes the stored iodin and delivers thyroxin to the blood stream. The storage of colloid in excess of the normal is indicative of a resting phase of the thyroid and is a result of damage from preëxisting hypertrophy and hyperplasia."

Colloid goiter is most frequently seen during the period of adolescence and pregnancy. The gland is soft, the enlargement uniform, consisting essentially of distention of the acini with colloid material. This accumulation is due to a physiological stimulation of the thyroid in the absence of sufficient iodin. One or both lateral lobes may be as large as eight to ten cm. in diameter. The thyroid arteries are distended and roll under the finger like a large lead pencil. Bruit and loud thrills are present, and in the majority of cases, the basal metabolism is from eight to fifteen per cent below the average normal. Pressure symptoms may or may not be present, depending upon the tissues affected. Colloid goiter rarely gives rise to constitutional symptoms. While the goiter frequently disappears, there sometimes remains a small adenoma, originating from the embryonal cells as a result of the same stimulation that caused the colloid excess.

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PROPHYLACTIC TREATMENT

The first step is the eradication of all focal infection of the oral and nasopharyngeal area, also of congenital syphilis. I would suggest that more attention be given those patients suffering from a scant and irregular menstruation, as there seems to be a marked endocrine relation between the thyroid and ovaries.

According to Marine and his coworkers, this type of goiter, when seen early, can be prevented and cured by the administration of sodium iodid, given in 0.2 gm. doses daily for ten consecutive days, repeated each spring and autumn. This method prevented the formation of goiter in over ninety-nine per cent of the school children of Akron, Ohio, where this method was carried out for a stated number of years. It also demonstrated that twenty-one per cent of those not receiving the prophylactic treatment developed enlargement of the thyroid gland during the time under observation. The sodium iodid treatment caused a decrease in sixty-five per cent of the enlarged thyroid, as contrasted with thirteen and eight-tenths per cent among those not treated. This seems to prove conclusively the soundness of the prophylactic treatment and the benefit that may be obtained for developed cases. This form of treatment may also eliminate the adenomata frequently developed coincident with colloid goiter, which cause trouble later in life. Plummer has achieved remarkable results: in from twelve to twenty-four hours following the intravenous administration of thyroxin, the thyroid vessels are not palpable and the bruit and thrill are no longer audible. The gland rapidly shrinks in size, in some instances becoming barely palpable in three weeks. The continued administration of thyroxin prevents the reappearance of the goiter. However, upon the withdrawal of the drug, the thyroid may rapidly attain its original size. After absorption of the colloid, iodin, in many instances at least, will prevent its redisposition. The thyroid of the human cretin distended with colloid reacts as does the colloid goiter of adolescence.

X-RAY TREATMENT

Russell Boggs claims good results from irradiation of colloid goiters of adolescence, and after a number of years, none of the colloids have shown adenomata or degeneration. Most authorities advise against x-ray treatment for this type of goiter. Colloid goiter of adolescence is the only type of goiter which disappears under the administration of iodin or thyroxin and should not be considered a surgical condition. Its failure to disappear under the administration of these agents probably indicates that it is not a simple colloid goiter, but one of the mixed types often seen, in which colloid goiter is associated with small adenomatous growths of the thyroid. When such goiters are treated with iodin or thyroxin, the colloid portion disappears and the goiter is reduced in size, but the adenomata remain and are then more easily recognized. Colloid goiters may recur when removed surgically unless iodin or thyroxin is administered as a postoperative measure.

The colloid goiter of adults may call for surgical interference, as it is likely to become toxic by the formation of adenomata and cause dangerous pressure symptoms and may undergo malignant degeneration.

In conclusion, I would suggest that if we are to accomplish results from this established principle of prevention by this simple and practical method of Marine, it should be brought to the attention of every medical man interested in the yearly examination of our school children and also to the men interested in industrial medicine.

PREVENTION AND TREATMENT OF SIMPLE GOITER*†

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It may be of interest to this audience to recall that the first practical demonstration of goiter prevention on a large scale was carried out in this state on brook trout, in the years 1909 and 1910. This was made possible through the efforts of the Commissioner of Fisheries, Mr. W. E. Meehan, who arranged with a large private fish hatchery in Pike County to place all the facilities of their plant at our disposal.

Our increasing knowledge of the physiology and pathology of thyroid enlargements has simplified greatly the clinical classification of goiter. For practical purposes we may divide goiter into two great groups:

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†From the Division of Laboratories, Montefiore Hospital, New York.

- I. Simple Goiter
  - Endemic
  - Epidemic
  - Sporadic
  - "Colloid"
  - "Cystic"
- II. Exophthalmic Goiter
  - Hyperthyroidism
  - Toxic Goiter
  - Toxic Adenoma, etc.

Simple goiter includes those thyroid enlargements designated as epidemic, endemic, sporadic and physiologic; while exophthalmic goiter includes a great group of ill understood clinical states in which increased heat production and myasthenia are the two major manifestations. We know almost nothing concerning the essential nature of exophthalmic goiter despite an enormous literature and despite the fact that we know more about the thyroid than any other body tissue. That it is a highly complex disturbance of the functional interaction of many organs both with internal and external secretion is certain, and until more is known concerning its nature, I believe we are not justified in trying to fool ourselves into thinking we are explaining the condition merely by multiplying names.

While to-day we sharply distinguish between simple goiter on the one hand and exophthalmic goiter on the other, there is evidence that in man there are important relations between the two groups. Exophthalmic goiter, so far as is yet definitely known, occurs spontaneously only in man, while simple goiter occurs in all animals having the ductless thyroid. Exophthalmic goiter is not notably associated with districts, while with simple goiter this is most characteristic. Exophthalmic goiter occurs more frequently in the more highly developed and energetic races, while in simple goiter these factors have no influence.

OCCURRENCE AND DISTRIBUTION

Simple goiter may occur in any part of the world, on land or on sea, and in all animals with the ductless thyroid. On the seacoasts generally it is rare and is usually seen in women during the childbearing period. There are many reports of the sudden occurrence of large numbers of goiters—so-called epidemic goiter—both in man and in animals. These sudden outbreaks likewise may occur anywhere, as, for example, in fish hatcheries, in large poultry establishments, in herds of dairy cattle and in military organizations. Then there are the great more or less defined regions of the world where the incidence of goiter is very high and where all animals are affected — the so-called endemic goiter districts. The most notable of these districts are the Himalaya Mountain region of Northern India, the Alps region in Europe, the Andes plateau, and in North America the Great Lakes Basin and the Cascade Mountain regions of Oregon, Washington and British Columbia. These regions, for the most part, occur on soils deposited from the melting ice of the last glacial period.

ETIOLOGY

The ultimate cause or causes of thyroid enlargement are still unknown. The immediate cause is a deficiency in the iodin store of the thyroid This deficiency may be relative or absolute; that is, goiter is only a symptom of a disturbance in nutrition in which iodin plays an important rôle. The iodin deficiency may result from any condition which (1) increases the needs of the organism for iodin as in certain infectious diseases, (2) during puberty, (3) during pregnancy and lactation, or (4) from any condition which interferes with or prevents the utilization of the normal intake of iodin, or lastly, (5) from an actual lack or a deprivation of iodin (natural or experimental). Certain recent experimental observations promise to shed some light on the underlying causes of the iodin deficiency and therefore on the ultimate cause of thyroid enlargement. The relation of the sex glands to thyroid enlargement, known in its crudest form (the enlargements during puberty and pregnancy) from the earliest times, has taken on renewed interest by the experimental demonstration of a thyroid-suprarenal cortex interrelationship. In brief, the experimental evidence for such a relationship is as follows: If one cripples sufficiently the suprarenal cortex in dogs, cats or rabbits with intact thyroids, there occurs a marked and prolonged rise in heat production, while if one removes the thyroid gland before crippling the suprarenal cortex, this rise in heat production does not occur. It has been further shown that the rise in heat production is associated with a rapid discharge of the iodin containing hormone from the thyroid. This interrelationship, it is believed, ultimately will be shown to have an important bearing on those thyroid enlargements occurring particularly during puberty, pregnancy and the menopause.

During the developmental period of bacteriology, great stress was laid on the possibly infectious nature of goiter. The conception that goiter is due directly to a *contagium vivum* in the sense that this term is ordinarily used may now be abandoned. That toxins both of bacterial and of other origin may indirectly excite the thyroid gland is, of course, well known through the experimental studies, particularly of McCarrison. The thyroid enlargements seen in tuberculosis, in active syphilis, in acute fevers such as pneumonia and scarlet fever, clearly establish the fact that the thyroid is an important element in the defensive mechanism against infections.

Practically every known substance in the soil, air and water have at one time or another been advanced as etiologic factors. Water has been associated with the cause of goiter by all peoples from remotest times. The North American Indians and the inhabitants of Central Africa were as strongly convinced that water was a causal factor as were the Greeks and Romans. If water is a factor (and I think it is), it would appear that it is the *absence* and not the presence of some substance which causes thyroid hypertrophy. At present the best conception of the etiology of simple goiter is that it is a compensatory or work hypertrophy arising in the course of metabolic disturbances and immediately depending on a relative or absolute deficiency of iodin.

PATHOLOGICAL ANATOMY

Anatomically, a wide range of changes may be present, depending on the species of animal and on the stage (duration) of the disease. It always begins with a decrease in the colloid material and a hypertrophy of the epithelial cells, at first cuboidal, later columnar, with infoldings and plications. In man and fowls, the stage most commonly studied anatomically is characterized by an abundance of colloid material—the so-called cystic or colloid goiter of the older writers—while in dogs, sheep, cattle, pigs, fish, etc., the accumulation of colloid is seen only in the late regressive or quiescent stages. In man the adenomatous form (struma nodosa) is very common, but it is exceedingly rare in all the lower animals. These adenomas, in all probability, arise from fetal cell rests (Wölfler). The stimulus which initiates the growth of the cell rests (adenomas) and that which initiates the growth of the more differentiated thyroid tissue are probably identical. These growths have some of the attributes of tumor, in that their growth may not be arrested by iodin administration or by the natural physiologic compensation. On the other hand many of them are capable of full thyroid function.

EXPERIMENTAL PHYSIOLOGY

In order to present more clearly the experimental basis of goiter prevention, I will enumerate a few of the more important physiological and chemical facts on which the practical application of this accomplishment in preventive medicine is based:

1. The active principle of the thyroid is a very stable organic compound of iodin, first recognized by Baumann in 1895 and isolated in crystalline form by Kendall in 1916.

2. The developmental stage of all goiters in all animals is characterized by an increased blood flow, an increase in the size and number of secreting cells, a decrease in the stainable colloid and a marked absolute decrease in the iodin store. The decrease in the iodin store precedes the cell hypertrophy and hyperplasia.

3. Similar changes (compensatory hyperplasia) invariably occur in the remaining portion of the gland when a sufficient amount of the entire gland is removed. The amount of gland it is necessary to remove in order to produce compensatory hyperplasia varies somewhat with the species of animal, with the age, diet, and especially with the presence or absence of iodin.

4. The administration of exceedingly small amounts of iodin in any mannner completely protects the remaining thyroid against compensatory hyperplasia even after removal of three-fourths of the normal gland.

5. Thyroid tissue autotransplanted in any part of the body exhibits the same reaction to iodin as the non-transplanted tissue.

6. If most of the thyroid gland is removed before or in the early stages of pregnancy and rigid precautions are taken to exclude iodin, the young at birth will have enlarged thyroids, as first shown by Halsted in dogs while, if iodin is available, the young at birth will have normal thyroids.

7. A milligram of iodin given at weekly intervals has been found sufficient to prevent thyroid hyperplasia in young dogs.

8. The thyroid tissue has an extraordinary affinity for iodin as has been demonstrated both *in vivo* and *in vitro*.

9. If the iodin store in the thyroid is maintained above 0.1 per cent, no hyperplastic changes, and therefore no thyroid enlargement can develop.

GOITER PREVENTION

As already mentioned, these facts were first utilized on a large scale in the prevention of goiter in brook trout in 1910. It was demonstrated that iodin added to the water in a concentration not exceeding 1 : 1,000,000 arrested or prevented the development of thyroid hyperplasia. Since then, this method, or some modification, has been successfully applied in the prevention of goiter in men, sheep, cattle, hogs and poultry. One of the most striking illustrations of its practical application in animal industry is reported in the results obtained in the Pemberton Meadows Valley in British Columbia. In 1916, Mr. Ronayne, a prominent farmer in this valley, sought advice as to what could be done to control goiter, since it was practically impossible to rear any animal to maturity on account of goiter and cretinism. At that time he was advised to use the equivalent of a few milligrams of iodin weekly, administered in the food. Since then, Mr. Ronayne states that they have had no difficulty in absolutely controlling goiter by this very simple and inexpensive means.

To our knowledge, the prevention of goiter in man, while it may be carried out just as simply and as easily as in the lower animals, was not attempted on any large or practical scale until 1917, when Dr. Kimball and I began its practical application in the school population of the city of Akron. The method used at that time consisted in the administration of 2 gms. of sodium iodid in 0.2 gm. doses distributed over a period of two weeks, and repeated each autumn and spring. It was pointed out at the time that this amount of iodin was excessive and far beyond the needs of the individual or the ability of the thyroid to utilize or store it. These experiments were carried out over a period of two and one-half years and the results are briefly as follows: Of 2,190 pupils taking 2 gms. of sodium iodid twice yearly, only five developed enlargement of the thyroid; while of 2,305 pupils not taking the prophylactic, 495 developed thyroid enlargement. Of 1,182 pupils with thyroid enlargement at the first examination and who took the prophylactic, 773 thyroids decreased in size; while of 1,048 pupils with thyroid enlargement at first examination and who did not take the prophylactic, 145 thyroids decreased in size. These figures demonstrate in a striking manner both the preventive and the curative effects. Klinger in Switzerland in 1921, reported even more striking curative effects. He worked with school populations in which the incidence of goiter varied from 82 to 95 per cent, while our maximum incidence in Akron was 56 per cent. He reported observations on 760 children, of whom 90 per cent were goiterous at the first examination. After fifteen months' treatment with from 10 to 15 mgms. of iodin weekly, only 28.3 per cent were goiterous.

Since these results were reported, numerous papers have appeared in the European literature confirming these observations and extending the prophylactic use of iodin especially in Switzerland, where the Swiss Goiter Commission has advised the use of iodin for all cantons.

As already pointed out, the form or manner of iodin administration is of little importance. The essential conditions to be borne in mind are that iodin is effective whether administered by inhalation, by mouth, by application to the skin or by injection; that only very small doses are necessary (60 to 120 mgms.—1 to 2 grains—annually is sufficient to prevent thyroid hypertrophy), and that it should be given in the most practical way that provides control of intake. In Switzerland they have used iodized fat tablets containing 3 to 5 mgms. of iodin. Historically, and, of course, quite unknowingly, iodized salt was the first means of administration, and I am of the opinion that ultimately it will prove to be the best means of administration. A concrete illustration of the efficacy of iodized salt is shown in the Canton of Vaud in Switzerland, which has been singularly free from goiter, while in all the surrounding cantons the incidence of goiter is very high. Recent examination of the salt used in this canton shows it contains traces of iodin. A similar accidental experiment of this kind occurred in Michigan where the incidence of goiter in sheep greatly decreased following the use of crude salt.

TREATMENT

Now as regards the treatment of goiter, iodin alone suffices to bring about a cure in the very early or developmental stages of goiter both in man and animals. In the long-standing cases, and unfortunately the physician's advice is not sought until the goiter is well advanced, medical measures are only partially successful. There is no difficulty in relieving any physiological insufficiency of the thyroid by iodin, but it is quite impossible to bring about the absorption of large goiters by medical measures. From many years' experience in Cleveland, I have come to the conclusion that the best plan of medical treatment for long-standing goiters is as follows: Give one gram desiccated thyroid, distributed over a period of two weeks, then saturate the thyroid with iodin by giving 15 to 30 c.c. of syrup of hydriodic acid in 1 c.c. doses daily, or any other preparation containing the equivalent amount of iodin. This treatment may be repeated twice yearly.

DANGERS AND UNTOWARD EFFECTS

The dangers of giving iodin or desiccated thyroid in the amounts indicated to children and adolescents are negligible. Exophthalmic goiter and iodism are the only two important conditions to be looked for. Much has been written on the production and aggravation of exophthalmic goiter by iodin and desiccated thyroid. A study of this literature shows that excessive amounts of iodin or desiccated thyroid—grams instead of milligrams—were used. In adults the possibility of aggravating an exophthalmic goiter or even the production of the syndrome in susceptible individuals must be kept in mind.

Variations in susceptibility of individuals to desiccated thyroid and adrenalin are well known. In some apparently normal individuals the pulse rate and metabolism may be markedly raised by a gram of desiccated thyroid, while in others no such effect is noted after ten times this amount. The explanation for this susceptibility is one of the most interesting problems in endocrinology, and recent work has offered a partial explanation in that epinephrin enhances the action of thyroid and thyroid enhances the action of epinephrin. Desiccated thyroid, therefore, while it is an excellent prophylactic, is too dangerous for general use because of variations in individual susceptibility.

It is only in the treatment of long-standing goiter that desiccated thyroid has any advantage over iodin. In such cases there is no question that a greater reduction in the size of the goiter can be brought about by desiccated thyroid, but it must be used with great care and under close supervision. Thyroxin has no advantage and many disadvantages over desiccated thyroid in the practical treatment of goiter. Iodism was observed in 0.5 per cent of 2,200 cases treated with sodium iodid in Akron, and Klinger in Switzerland did not observe a case. The nature of iodism is still unknown but sodium and potassium salts appear to cause iodism more frequently than organic preparations.

SUMMARY

The administration of 60 to 120 mgms. of iodin in any form twice a year is sufficient to prevent simple goiter in man. The old adage that an ounce of prevention is worth a pound of cure is outdone in the case of goiter, where one milligram of prevention is worth more than a thousand milligrams of cure. Iodin has been knowingly used in the treatment of human goiter since 1820 and in its prevention since 1917. In young individuals with thyroid enlargements of recent development, the curative effects of iodin are very striking and amount to complete relief. In long-standing goiter, neither iodin nor desiccated thyroid are of much value in relieving the deformity.

The dangers and untoward effects of iodin when used in proper amounts are negligible. Iodin, like all other foods has been greatly abused, and its abuse in the treatment of goiter will continue until the profession as a whole realizes that the maximum storage capacity of the normal thyroid for iodin is not over 30 milligrams, and that such a store is sufficient to meet the ordinary physiological needs of the organism for months. Desiccated thyroid is theoretically better than iodin in the treatment and prevention of goiter but practically it is too dangerous a drug to be recommended at present.

Simple or endemic goiter most commonly develops (1) during fetal life, (2) during adolescense, and (3) during pregnancy and lactation. Any plan of prevention that controls thyroid growth during these three periods would practically eliminate goiter. Goiter in the mother and fetus can be prevented as easily and as simply as that of adolescents and by the same means. The greatest number of goiters develop around the age of puberty, and in the endemic districts of the United States the administration of iodin between the ages of eleven and seventeen would almost completely prevent these enlargements. As to the best method of applying prophylaxis, I believe that at present in endemic goiter districts it should be a public health measure administered through the public school systems under medical supervision. The prevention of fetal, maternal and sporadic goiter would probably be the responsibility of the private physician. (Perhaps ultimately the household use of iodized or sea salt will become the preferred plan.)

The prevention of simple goiter means vastly more than preserving the normal outlines of the neck. It means, in addition, the control of those forms of physical and mental degeneration such as cretinism, mutism and idiocy, which are dependent upon thyroid insufficiency. Further, it would prevent the development of thyroid adenomas. The terminal metamorphoses of adenomas are far more serious than those of simple hyperplasia, since in addition to hemorrhage and cyst formation probably 90 per cent of the malignant tumors of the thyroid arise from these growths. Further, cases with long-standing goiter are apparently more susceptible to the development of exophthalmic goiter, especially around the menopause. These forms of exophthalmic goiter are often designated as secondary exophthalmic goiter or so-called toxic adenoma. The prevention of simple goiter would probably materially reduce these forms of exophthalmic goiter.

In conclusion, I should like to emphasize that simple goiter is the easiest of all known diseases to prevent and that it may be excluded, for all practical purposes, from the list of human diseases as soon as society determines to make the effort, and it will require but a feeble effort.

DISCUSSION

OF SYMPOSIUM ON GOITER

Dr. Lawrence Litchfield (Pittsburgh): I was particularly pleased and honored when I was asked by Dr. Simonton to open the discussion on Dr. Marine's paper. Some of the oldest members may remember that for four or five years I was chairman of the committee on scientific work of this Society, having a large share in making up the program and for that entire time I was persecuting Dr. Marine to get him to talk to us about the thyroid. It was I who suggested him for this meeting. So I have been trying practically for ten or twelve years to get Dr. Marine to talk to us about the thyroid.

Now if I talk about Dr. Marine rather than about his paper it is because after he had been invited I went out and spent a day with him on Gun Hill Road and asked him if he would please leave me something to say and he promised me that he would and that he would leave to me the discussion of the effect of the prevention of simple goiter in cutting down the incidence of toxic goiter. I thanked him, but he has broken his promise in that he has brought in and cleared up that subject, so if I embarrass him it is his own fault.

I regard Dr. Marine as one of the most inspiring personalities in the medical profession of America to-day. From the time he left the medical school he has devoted his life to the subject of goiter and the reason he would not talk before when I asked him so frequently to do so was, not that he did not like to talk, but that he was not ready. What he has told you to-day is real wisdom. As I said yesterday, wisdom springs from doubt, the observation of phenomena and from experimentation, not from the study of tradition. Dr. Marine has devoted his life to the study of goiter, observation and experimentation and the legitimate doubt of all traditional theory and belief, and what he has given you to-day is the result of that work and is pure wisdom.

There is one question which I should like to ask Dr. Marine. In view of the facts that salt made by the evaporation of sea water has been proposed for general use as table salt on account of its content of iodin, and that in some districts the natives have an idea that it is a good thing to drink a half pint of sea water every morning before breakfast for a few weeks, on their summer vacation, I should like to ask Dr. Marine if sea water contains enough iodin if taken in that way to supply the necessary amount for the year. I should like to ask, also, if shad and salmon and other fish that spend part of their lives in the sea, develop goiter, as trout and fresh water fish do.

I heartily agree with Dr. Marine that the use of iodin in sufficient quantity should be made a matter of public health in all goiterous districts. It is not surprising, but is very lamentable, that these districts are so slow to realize this matter. Pittsburgh has not made a move in this direction and yet we have a great deal of simple and toxic goiter. It is only now, when we have a physician at the head of our city health department, that we hope to have iodin served regularly in the public schools.

I wish, on behalf of the Society, to thank Dr. Marine for coming down here from New York and giving us this most authoritative paper.

Dr. Henry D. Jump (Philadelphia): This valuable paper is so complete and its conclusions so positive that little is left to discuss. Since the introduction of the treatment of cretinism and myxedema by the administration of thyroid nothing has been done in the province of endocrinology of such practical value as this work of Marine. He has demonstrated without the shadow of doubt the truth of his conclusion "that simple goiter is the easiest of all known diseases to prevent." Outside of the demonstrated fact that iodin or its salts will prevent and in many cases cure simple goiter, two points, particularly, in this address are impressive. I deem it worth while to repeat these that they may become more fixed in our minds. The first of these is that simple goiter most commonly develops in fetal life, adolescence and pregnancy. Many of us who do not live in goiter districts, and who therefore do not see great numbers of these cases, are prone to be alarmed at the hypertrophy of the thyroid in adolescence. I recently saw a girl with a goiter of adolescence whose physician had advised its removal, because he believed in early surgical interference in exophthalmic goiter. He missed the point entirely that it was simple goiter of adolescence and could be helped by administration of iodin. The second is that prevention of simple goiter means prevention of mutism, idiocy and cretinism, which are dependent on thyroid insufficiency, and further that adenomas and exophthalmic goiter may occur in consequence of the simple goiter. While these conditions do not occur largely they are possibilities of grave import.

There are in Pennsylvania many goiter districts, or rather a widespread and irregularly formed district where this disease exists endemically. How prevalent the condition is, is not known, for no statistics have been gathered. So far as I know Marine's method has been used only by individuals and not on any large groups. It would be of great value to gather statistics in this district and to make an effort to institute treatment of all school children. I believe it is properly a function of this Society to stimulate such work through the county societies.

Dr. A. E. Roussel (Philadelphia): For a number of years past I have been interested in this subject, but perhaps more so in the subject of basal metabolism, which I take it is also included in this discussion. I am rather surprised that in goiter cases exhibited here today the basal metabolism has not been taken. That, to my mind, is an omission that should not occur in the present day. Basal metabolism has its limitations, as have other so-called instruments of precision, but it is almost a requisite in determining minor degrees of toxicity and hyperthyroidism, deficient thyroid secretion and myxedema. Perhaps, of the two conditions, more cases of myxedema are unrecognized than of toxic goiter. A good basal metabolism apparatus should be in every hospital; indeed, more than that, men working in lines in which it is valuable should make use of it not only in diagnosis, but as regards the questions of treatment and prognosis, in deciding when cases should be operated upon, and also when they should have x-ray treatment, which subject is to be discussed later on.

Personally, I have no doubt that Dr. Marine's experiments have been epochal in the prevention of goiter. I am not satisfied, however, from the results of a fairly large experience, that treatment by iodin in exophthalmic goiter is productive of good results, even in small doses, as he has recommended. I shall approach that subject very cautiously.

Dr. George W. Reese (Shamokin): It is very evident that we have all enjoyed the classical papers this afternoon. Nevertheless, I know that the man who has the genius of Homer, the sublime soul of Plato and the wisdom of Socrates believes that metabolism is a myth. Crile, the man who is doing more individual work on the thyroid, not in America but in the world, condemns basal metabolism — and I know whereof I speak.

The work of modern science is the substitution of facts for appearances and of demonstration for impression. In metabolism we have no concrete results, but a myth such as we had in barium treatment, and the time has come for the American profession to wake up. I have no personal grievance, as I never used the apparatus and do not know a thing about it (although I have treated 300 goiters without a death), but I am quoting the authority that does know something about it.

My position is this, and I advocated the same thing five years ago, that the medical profession, before it allows anything to be put on the market, whether it be a drug, a vaccine or an instrument, should get the approval of the American Medical Association and five of the best colleges in the country. In this way you will get results.

Dr. Marine (in closing): Relative to Dr. Litchfield's question regarding iodin in sea water and whether sea salt contains a sufficient amount of iodin to prevent goiter when such salt is used in average daily amounts, I would doubt it. Sea water contains iodin in the proportion of 50 parts iodin to 1,000,000 parts chlorine. In reply to his other question as to the presence of iodin in sea fish, there is iodin in all sea fish. That has been demonstrated in so far as the cure and prevention of goiter in brook trout is concerned. In experimenting with the latter we switched to a diet of hashed sea fish and that diet promptly relieved the goiter. All sea foods contain iodin. There is no authentic instance on record of the occurrence of goiter in animals living in the sea.

I was going to apologize for saying what I did regarding the abuse of iodin and dessicated thyroid, not only in the treatment of exophthalmic goiter but also in the treatment and prevention of simple goiter, but the views of other speakers make this unnecessary. I should like to leave this audience with the impression, in so far as my own view is concerned, that iodin and thyroid should not be used in any frank case of exophthalmic goiter and that in cases of simple goiter in women, particularly after puberty or around the menopause, these drugs should be used in minimum doses. I think that a great many of the cases of so-called toxic adenomas are primarily menopause phenomena made markedly worse by the injudicious use of iodin or thyroid. In other words, the trouble is caused by the menopause plus the use of iodin and thyroid.

I have spent a great deal of time working with the thyroid gland, and I think it is blamed for a great many more things than it is guilty of, and that the reason we as physicians blame it for so many ills is that it is superficial and capable of very rapid response by means of enlargement. If the suprarenal glands were as accessible and underwent as great anatomical changes, we would blame them for a thousand things. Thyroid enlargement is only a symptom.

In regard to the prevention of goiter in a state like Pennsylvania, I believe that long before we get to the question of preventing goiter, we need, as Dr. Litchfield has emphasized, a survey of the incidence of goiter. We need to know what the incidence is in any unit of population in representative parts, not only of this state but of others in the goiter districts. We can secure this information by utilizing the present machinery, namely, the medical inspection of the public schools. If we make a survey of the school population between the ages of 10 to 16, or from the fifth to the twelfth grades, we will get a cross section of the frequency of goiter and can then determine whether it is the proper thing to introduce preventive treatment as a public health measure or whether it had better be entrusted to the individual physician. With our present knowledge, I am firmly convinced that the practicing physician who has charge of the medical welfare of a family is at least morally guilty of professional negligence if he permits a single case of simple goiter to develop in such a family.

I wish to thank you, gentlemen, for the privilege of speaking before the Medical Society of the State of Pennsylvania. It has been a great pleasure .

(The remaining papers of the Goiter Symposium will be published in the May number of this Journal.)

THE CLINICAL DETERMINATION OF HEART SIZE*

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This paper is devoted to the elaboration of three theses:

First, that cardiac percussion is essentially unreliable and inaccurate.

Second, that the x-rays are an accurate and practical method for determination of heart size or at least of two dimensions of the heart.

Third, that small changes in the cardiac silhouette have a more definite clinical value than is usually accorded them.

The first proposition it is worth while to discuss in detail, for it meets with almost universal dissent. Errors in cardiac percussion are common enough. But there is a universal tendency to consider them individual and personal, i. e., as due to lack of skill. Time will not permit discussion of the physical and anatomical facts on which I base a different view, except to exhibit a picture of Dr. Fetterolf's very illuminating section of the thorax at the level of the fourth rib and to ask "In the case of a small cylinder (the heart) inside a large one (the thoracic wall), just where can the 'edge' of the smaller cylinder be said to lie?"

As a striking failure of cardiac percussion in even skilled hands let us consider the undersized heart. Three generations ago Virchow described this from the dead house. He called it the hypoplastic heart, but to adopt that name commits us to a pathological theory not yet generally accepted.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

Many, perhaps the majority, of roentgenologists look on it as a mere anatomical peculiarity without clinical significance. Even so, no one can use the x-rays in the chest without noting how frequent and conspicuous it is. If cardiac percussion were accurate it would be as prominent in physical diagnosis, but it is nowhere even mentioned in the clinical literature of the preroentgen era. We are compelled to defer to roentgenologists and not to clinicians for an opinion as to its clinical value.

The position of the left border is much affected by very slight causes. The difference between the heart in the erect position and the heart in the recumbent position is familiar, but we constantly see reports giving the distance of the left border from the middle line very exactly in centimeters but not specifying whether the examination was made in the erect or the recumbent position. Such work is not exact even if the sacred centimeter is dragged in. Twenty years ago the Schott's were reporting an inch to an inch and a half difference in the position of the left border before and after a single Nauheim bath. Such changes in heart size without any change in clinical condition seemed incredible. But men who saw the Schotts' work believed it sincere and careful. It was not until Franz Groedel began his routine orthodiagraphic examinations that any one suspected that the difference was simply a lower position of the diaphragm, permitting a more vertical position of the heart.

My second proposition can be passed over, as it is generally accepted. Only the orthodiagraph or the teleoroentgenogram gives a really accurate silhouette; but the distortion in ordinary methods is constant and mathematical. Using always the same tube distance (as one is compelled to with a fluoroscope) the error is easily allowed for.

As to the value of small changes. Mitral stenosis can be definitely diagnosed by the x-ray alone—either positively or negatively. When uncomplicated it causes enlargement of the left auricle and none of any other part of the heart. On this point the following experiment was made. A dermatologist was called into the dark room. He has an unusually good eye for color but for several years has given no attention to cardiac pathology. A case of mitral stenosis, with the characteristic deformity of shadow, was shown, comparing it carefully with a plate of normal heart. Since that, five or six cases of mitral stenosis (the run of office work) have been shown him, mingled with a dozen or more hearts normal or presenting other lesions. In no instance has he failed to pick out the stenosis cases.

The diagnosis of functional murmurs must be presented from a theoretical standpoint, but these considerations have stood the test of twelve years' practical work. It is difficult to understand how any material valvular defect can be compensated without enlargement of part or all of the heart. If there are no symptoms of cardiac failure and no enlargement it seems a safe assumption that any murmur present must be a functional one, no matter how far this may conflict with preconceived opinions. A thread of fibrin across an orifice or a minute leak past a stiff valve edge may give a loud harsh murmur. But any real mechanical impediment to the circulation must surely result in hypertrophy. In general we know that systolic murmurs have very little diagnostic value but in practice we always accord them some attention. The presystolic murmur (except in enormously enlarged hearts) has been given almost pathognomonic value. A recent number of the *Journal A. M. A.* reports three cases having presystolic murmurs and thrills, but at autopsy no mitral stenosis and no enlargement. The great value of the x-ray in this regard lies in establishing the diagnosis of mitral stenosis when no murmur is present. It is a platitude that the presystolic murmur always disappears when auricular fibrillation is present and that it is very prone to disappear during any severe intercurrent illness, i. e., at the times when diagnosis is most important. If a patient first comes under observation at such a time, direct diagnosis of mitral stenosis is almost impossible. But the x-ray, showing a dilated heart with special predominance of the auricle, puts the diagnosis beyond question.

If these principles shall ever be generally accepted and the x-ray become a routine item in all chest examinations we will acquire the habit of gauging the severity of a valvular lesion by the amount of hypertrophy that is necessary to produce perfect compensation.

This leads us to a consideration not strictly germane to heart size. We are accustomed to diagnose cardiac failure by exertion dyspnea, hepatic swelling, or moist râles at the back of both lungs. These are crude methods. As Franz Groedel has recently pointed out, the first physical sign of cardiac failure is a haze of the lung due to passive congestion. In extreme heart failure this is marked—sometimes so deep as somewhat to obscure the cardiac borders. But in the slight degrees in which it has great clinical value it is very faint and will be detected only by those who have the habit of routine x-ray examination of all sorts of chests.

Certain basic principles are founded on observations which rest on cardiac percussion. If this is misleading, principles based on it should be discarded. For example, the theory that digitalis acts by restoring tonicity to a dilated heart has been ruled out of court because we often see striking benefit from it without demonstrable change in percussion dullness. But if percussion is not sufficiently exact to diagnose the undersized heart it could not possibly demonstrate such a difference. The whole question should be reviewed with exact x-ray determinations. Professor Christien has recently emphatically contradicted the cardiological dogma that it is only in auricular fibrillation that digitalis shows striking benefit and it is no longer heresy to question it.

If I am justified in looking on all murmurs as functional no matter what the location or distribution, if only the x-ray shows that there is no cardiac enlargement, then the whole subject of diagnosis of functional from organic murmurs requires reconsideration.

There are many facts in regard to heart size which should be more generally known than they are; for example, that a trained athlete shows diminished heart size on severe exertion. But we can scarcely expect progress in any of these lines unless my first proposition is established, i. e., that cardiac percussion is inherently inaccurate.

DISCUSSION

Dr. S. Calvin Smith (Philadelphia): Dr. Boyce is to be congratulated on the clear manner in which he has drawn our attention to the clinical value of the roentgen rays in appraising heart affections. To the first premise in the paper, namely, "Cardiac percussion is essentially unreliable and inaccurate," I readily subscribe, for I hesitate to accept a transverse cardiac diameter that is estimated by percussion alone. But when a heart border is located, not only by the first change in percussion note and by an increase in resistance, but also by actually feeling the outermost point at which the heart beat is palpable, I think we are safe in assuming that the left border of the heart has been fairly well estimated for routine clinical purposes. The x-ray has established the fact that the furthest point at which one can feel the outermost limit of precordial impulse determines the left border of the heart. This dictum holds true with some hearts. With others, the precordial impulse is, for various reasons, quite obscured, and a clinical estimate of heart size is not possible. In all doubtful cases the x-ray should be employed to determine the heart borders. I try to bear in mind, too, that a heart does not necessarily need to be enlarged to be a source of distressing symptoms. Small hearts will sometimes manifest most disquieting heart protests. And again, I feel that a heart does not always enlarge in a transverse direction; it sometimes seems to enlarge in the anteroposterior plane, in which event percussion is, as Dr. Boyce well says, misleading.

With the second premise of the essayist, namely, that "The x-ray is an accurate method for the determination of heart size," there can be only complete agreement.

In the third premise, which sets forth that "small changes in the cardiac silhouette are of great clinical value," Dr. Boyce refers to the x-ray evidences of passive pulmonary congestion as illustrating the point. I am sure that he does not mean to have us put a pathologic interpretation on such alterations in cardiac contour as are dependent upon posture, respiration, exercise, heart load, etc.

I agree that estimates of heart size should be accompanied by some phrase to indicate the circumstances under which the estimate was made—as "transverse cardiac diameter, by x-ray, tube distance blank feet, erect posture, equals blank centimeters"—although when the posture is not stated we can assume that the estimate was made with the patient erect, owing to its being generally known that the position of the heart is subject to postural shift when the patient reclines and, therefore, figures secured when reclining would be valueless.

Concerning the diagnosis of mitral stenosis, of such varying degrees of severity as are displayed in specimen jars of any medical museum, I would want more evidence than that afforded by the x-ray, electrocardiograph, stethoscope or any other instrumental examination, before settling on the particular valve affected and the particular deformity therein present. Mitral stenosis is a diagnosis so often made clinically, and so frequently repudiated at necropsies, that I have become chary of the term. If I made it after a full consideration of the individual's previous diseases and previous history; if there were distinctive findings in a patient with circulatory failure on inspection, palpation, percussion, mensuration and auscultation; if the x-ray and electrocardiograph yielded their characteristic findings, and if the clinical laboratory reports confirmed such dysfunctions as one expects in cases of circulatory failure, I might then hazard the diagnosis of mitral stenosis—and would feel most grateful towards the pathologist who confirmed the diagnosis at postmortem.

Dr. Howard G. Schleiter (Pittsburgh): I think that Dr. Boyce's papers are always interesting and stimulating because his familiarity with his subject is reinforced by a certain amount of healthy skepticism. His paper brings up a number of points of interest and dispute.

I agree with Dr. Boyce on the frequency with which percussion outlines are fallacious. In many cases, probably the majority, I believe that the x-ray findings and percussion findings agree. But in certain other instances it is impossible to make them agree even when we know how large the x-ray shadow is. It was for a time the custom in Sir James Mackenzie's clinic to record the size of the heart from day to day in chronic cases, without referring to the previous day's measurements. It was astonishing to note how the outlines made by the same observer varied from day to day. As it was most unlikely that this variation should be in the heart itself, one must conclude that the results of percussion were at fault.

With reference to the presystolic murmur, it has been taught for years that this murmur is produced by the contractions of the left auricle in the presence of mitral stenosis, and that in auricular fibrillation, the rhythmic movements of the auricle having ceased, this murmur will necessarily disappear. Of late some doubt has been thrown on this view—first because it is believed by some observers that the auricular muscle is incapable of sufficiently strong contractions to produce the typical crescendo murmur, and second because in some instances of auricular fibrillation systole is ushered in by a crescendo sound which is difficult to interpret otherwise than as a presystolic murmur.

Dr. E. J. G. Beardsley (Philadelphia): I do not think that anyone in this audience is ready to disagree seriously with any scientific statement that Dr. Boyce has made. Simplicity and availability of clinical methods, however, possess very real advantages over more accurate and more scientific procedures that are not available to the usual practitioner. The location of the apex beat of the heart and the outline by percussion of the approximate borders will seldom lead an observer astray.

Dr. Boyce (in closing): Dr. Smith makes two strong points against me. The first is that in some cases we can actually palpate the heart. In these we determine the left border very accurately and definitely. The answer is that it is only in a minority of cases, and those mostly normals, that we can do this. If you attempt it as a routine you will soon find yourself palpating the area of impulse—which is quite a different thing. And the position of the left border alone is of little value.

Dr. Smith's other point is of more importance. He put it very gently. To state it more bluntly, many men, abler than I, have been as self-satisfied as I am about their diagnoses of mitral stenosis. At the autopsy table they found that there was no basis whatever for such self-satisfaction. If I had been lucky enough to get an autopsy in every case in which I have diagnosed mitral stenosis in the last twelve years it is probable that I would have met with some very disagreeable surprises. But checking up the fluoroscope against other clinical methods, it shows up well. And it is much easier to acquire skill with it, while it is applicable at times when other clinical methods temporarily fail altogether.

Dr. Schleiter questions the invariable failure of the presystolic murmur during auricular fibrillation. My statement that it does fail is merely orthodox cardiological doctrine. It often does, diminishing the value of auscultation at such a time. Its occasional apparent persistence would furnish a theme for an interesting discussion, which would, however, lead us too far from our present subject.

PULMONARY TUBERCULOSIS AND APPENDICITIS*

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One of the first to call attention to tuberculosis of the vermiform appendix, was Corbin, an English writer, in 1837. Since that time some fifty or sixty articles on this subject have been written. Among the most comprehensive of these are by Muller in 1910, Kinghorn in 1916 and Scott in 1917. All writers agree that this condition is relatively infrequent, but say that it is more common than formerly supposed and often overlooked.

It is difficult to secure accurate data as to the condition of appendices removed, because until recently a histological examination was rarely made.

In trying to find the most complete autopsy report on the subject among the references at my command, I found that the Phipps Institute Report (volumes 1, 2 and 3) contains a very careful record of all their autopsies in which the tissue of the appendix was examined microscopically. In this report White discovers the percentage of tuberculous appendices to be as high as 59. All of these patients, however, had died of advanced tuberculosis.

Nothnagel quotes the autopsy statistics of Fenwick and Dodwell, who found only 17 cases of tuberculosis of the appendix in 2,000 autopsies. This was not a histological study. Where a careful histological examination has been made, the percentage of tuberculosis appendices found ranges from 22 to 59.

Regarding the number of tuberculosis appendices removed by operation, it is again difficult to secure accurate data for the reason given above. Deaver believes he has seen it in only .2% of his cases, Murphy allows 2%, Herisson from 1 to 2%, Lockwood 2%, Fitz 3%, and Mayo 1.5%. Kinghorn states that of 28 cases operated upon, 7 or 25% were tuberculous appendices.

The complication surely occurs often enough to urge us to make a careful study of it, and it is the general impression that the removed appendix is more frequently tuberculous than our reports would indicate.

Hartwell cites a case of suspected tuberculous appendix which failed to show the same histologically, but he still believes it was tuberculous and quotes German authorities who claim that all hypoplastic cases are tuberculous, being secondary to a lesion elsewhere in the body. Silvestri found manifestations of tuberculosis in 45% of 103 persons with appendicitis. I have found only one authority who believed that the disease is usually primary in the appendix. The great majority state that it is secondary, usually to ileocecal disease. All admit the possibility of its being primary, but John B. Deaver doubts it. Howard Kelly cites a case of primary tuberculous appendix occurring in his own practice and mentions five others from literature.

The object of this paper is to call attention to the frequency with which patients who have been operated upon for appendicitis, develop pulmonary tuberculosis and to offer evidence to prove that the primary focus is often in the lung at the time of operation. I have proved that tuberculosis of the appendix exists and that it is usually secondary. That the primary lesion in most cases is in the lungs will be evident by what follows.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

The connection of appendicitis with possible lung affection is rarely mentioned by surgical writers and if mentioned is not sufficiently emphasized to attract attention. During the past fourteen years I have been impressed with the frequency with which we find a history of appendicitis in patients who have been sent to White Haven with pulmonary tuberculosis. In looking up the records of 200 cases admitted to Sunnyrest and other private sanatoria under my care during the past two years, I find 25 who have had appendectomies, an incidence of 12½%. There have also been some cases who had definite attacks which did not come to operation. Kinghorn's experience is somewhat similar, as he states that of 727 patients treated during 11 years, 43 or 5.9% had appendicitis. In looking over the records of our large public sanatorium we find an incidence of six per cent. in the history of patients. The apparent discrepancy in percentages may be explained by inaccurate histories due to carelessness.

The above figures prove to my satisfaction that appendicitis precedes or is associated with pulmonary tuberculosis often enough to justify a survey of the subject.

It is not the purpose of this paper to comment on the treatment of this disease when it occurs, other than to endorse the surgical operation of removal. I say this despite the recently renewed discussion on the better results obtained by medical treatment.

In considering operation, however, I contend that the physician and surgeon should have in mind the frequency of the association of the two affections and the necessity of excluding the possibility of any pulmonary involvement before operation. This should be accomplished by having a careful history and physical examination made by one who is accustomed to examining and treating tuberculosis of the lungs. There may be rare instances where the urgency of the case, such as a fulminating pus appendix, will prevent this careful preliminary test. In most cases we have plenty of time, and if we realize that by carrying out this idea we will surely prevent many years of invalidism for our patients, the time will be well spent. Some of the older writers, notably Deaver and Kelly, state that the lungs should be examined where tuberculosis of the appendix is suspected, but in my experience this is rarely done.

After an operation where a tuberculous appendix is found, and we have proved that it is found in from 2% to 4% of operations, it is surely right and necessary to investigate the lung condition. This also in my experience has rarely been practised by either physician or surgeon.

As to the mode of operation and anesthetic to be used when tuberculosis of the lungs is found or suspected, there is still a divergence of opinion. Dr. Howard Kelly states that he prefers chloroform when there is bronchitis and advises cocain in chronic pulmonary cases. He quotes Cushing as having been the first to do an appendectomy under cocain anesthesia on account of a pulmonary affection. Muller advises against the use of ether and suggests spinal anesthesia.

The great majority of the present day surgeons are opposed to the administration of ether to any tuberculous patient, although I still occasionally hear of someone who is doing a great deal of surgery and who states that ether has no ill effect upon the lungs. Practically all phthisiotherapeutists are opposed to the administration of ether to their patients. This has been impressed upon them so many times by seeing the ill effects following operations where ether was administered, when the nature and severity of the surgical procedure could not account for the activity of the lung disease which followed. We therefore believe that there is no longer room for argument or doubt. Chloroform does not injure the lungs, but for well-known reasons, it is little used. As local anesthesia has become so well and favorably known and used that a member of our own Society has removed his own appendix with its aid, I see no reason why this anesthetic should not be used always. In the few cases in which the surgeon, for various reasons, cannot see his way clear to use local anesthesia, the use of gas and oxygen or spinal anesthesia can be substituted.

The other point I wish to bring out in this paper is the necessity for prolonging the convalescence after the appendectomy, where the lung condition is not satisfactory. Many of the 25 cases I have cited would not have active tuberculosis if they had been advised to prolong the rest period after leaving the hospital. This may not always be easy of accomplishment, but by explaining to the patient that by so doing he will probably prevent a long and serious illness, we can usually persuade him to follow our advice.

CONCLUSIONS

1. Appendicitis is often tuberculous. While it may be primary it is usually secondary to a focus in the lungs, either active or dormant; rarely secondary to a lesion in the intestines.

2. Appendicitis is often followed by ill health which culminates in active pulmonary disease.

3. A careful history and physical examination, with x-ray if possible, should be made of all cases about to be operated upon, to discover whether there is present an active or latent lesion.

4. Local anesthesia, cocain or novocain, should be used with gas oxygen as second choice, and the use of ether should be condemned for these cases.

5. The convalescence should be prolonged to avoid subsequent activation of the lung lesions if present.

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DISCUSSION

Dr. Howard G. Schleiter (Pittsburgh): I greatly enjoyed listening to Dr. Armstrong's paper and I feel that he has very rightly emphasized certain phases of this subject which we would do well to bear in mind more frequently. Of course, as Dr. Armstrong has said, when an autopsy is done on a case of tuberculosis, and tuberculosis of the appendix is found, such records for the purpose of our discussion are relatively negligible. The disease is so far advanced that it is not surprising that the appendix shows involvement along with the other organs of the body.

Regarding the clinical diagnosis of appendicitis in connection with pulmonary tuberculosis, acute appendicitis presents just the same symptoms and signs as in the nontuberculous case. On the other hand, there is no way of recognizing tuberculosis of the appendix as such. Its presence can only be suspected, and as shown by operation records, its incidence is low.

Now Dr. Armstrong also called attention to the fact that a number of tuberculous patients, varying between five and twelve per cent., gave a history of previous appendicitis. While I am not able to present any figures, it is my impression that, appendicitis being so common a disease, one might find a similar percentage in the histories of people having other diseases or of people who are in good health.

Regarding an examination of the chest beforehand, I feel that here Dr. Armstrong has touched on a very important point. Of course, it is common practice to examine the lungs before any operation involving a general anesthetic, in order to rule out any bronchitis, pneumonia, or other gross lesion. But a careful routine examination of the apices is less common than it should be. Such examinations are essential to prevent cases of pulmonary invalidism, having as their starting point the administration of a general anesthetic.

When presented with a clinical picture of acute appendicitis occurring with pulmonary tuberculosis, there is no room for doubt as to the proper procedure. The appendix must be removed. But a question arises in those cases of appendicitis which are not of the acute variety. These cases are often difficult of diagnosis. They are characterized by digestive changes, loss of appetite, loss of weight and strength, anemia, and may be confused with the early stages of pulmonary tuberculosis. It is also to be remembered that a chronic or latent appendicitis may be aggravated in the presence of pulmonary tuberculosis which, in the absence of tuberculosis, might remain latent and do no harm. In these cases the resistance of the patient is still further lessened by the presence of the appendicitis, as it would also be in the presence of any other focus of irritation or infection. By removing the appendix the resistance of the patient can be increased. In the nontuberculous individual a chronic appendix may be removed at a convenient time, but the appendix should be promptly removed in a tuberculous case for the purpose of removing a source of irritation and increasing the patient's resistance. Such operation depends of course on whether the patient's condition will permit it, but it has been found that tuberculous patients, particularly those undergoing sanitarium treatment, stand operation very well.

So far as anesthetics and prolonged convalescence are concerned, I am thoroughly in accord with Dr. Armstrong.

NASAL DIPHTHERIA*

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I do not suppose that anything I may say is new in any particular. Many others have doubtless had more experience in this disease than I. My apology for presenting this paper is the frequency with which I have encountered this location of the membrane in the past year, and the reasons, as I believe, for such frequency. I wish also to stimulate, if possible, the more routine taking of nasal cultures.

It was the teaching when I attended college that nasal diphtheria was a comparatively rare and serious type of the disease; that the cases were usually more toxic and required massive doses of antitoxin. Many authors to-day describe two distinct varieties of the disease—one serious and tending to be toxic, and the other very mild, with much exudate, but with little constitutional disturbance. Osler describes these two forms. Stumpell says, "Diphtheria extends very frequently into the nose. This, though not in itself dangerous, is usually a sign that the case is a severe one." Butler, in his "Diagnostics," says, "The general symptoms are usually, but not invariably severe." Trumpp, of Munich, ascribes to both forms a mortality of 60% for the severe variety. Fischer says, "No form of diphtheria is more fatal than the nasal variety. When the local affection is confined to the nose the outlook is not good."

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

I believe that the impression still prevails—at least, among many of the profession—that the location of the membrane on the nasal mucosa is quite infrequent, and when found the outlook is grave. This is due to a large degree to the symptoms as given in the average textbook. The impression one gets is that the patient is usually very ill, is toxic, with a bloody nasal discharge and excoriation of the upper lip. While one meets these symptoms all too frequently, I believe that they are usually found in cases where the infection has been present for some days at least. If their appearance is awaited, many cases will be overlooked, the severe ones only diagnosed, and the mortality will indeed be high.

We know that we can no longer trust our eyes, not to mention our nose, in the detection of faucial diphtheria. Many cases we know cannot be differentiated from follicular tonsillitis, except by culture. The symptoms are often exceedingly mild. In the schools of Pittsburgh, during the 1921 and 1922 school term, where 13,841 throat cultures were taken, 200, or 1.44% were positive.

In Pittsburgh, all children in school complaining of sore throat, no matter how mild, and all cases returning to school, if there is any suspicion that an inflammatory condition of the throat has been the cause of their absence, are cultured and sent home to return the following day. Also, where a case of clinical diphtheria occurs in a school room, the entire room is cultured. Hence the large number of cultures. Some few that gave positive cultures were undoubtedly carriers. Some few may have had the pseudo bacillus in their throats. The majority of the 200 cases, however, were undoubtedly mild faucial diphtheria not ill enough to see a physician.

During the same period of time 696 nasal cultures were taken. Of these, 60, or 8.6%, were positive. Had every child with a rhinitis been cultured, the percentage would, of course, not have been so high. Only those were cultured who had bloody nasal discharge, crusting of the alae, or were otherwise suspicious. Nevertheless, of all the positive cultures obtained in our schools, 260 in number, 200 were throat cultures and 60 were nasal cultures. Had a more intensive nasal culturing been done, it is probable that many more would have been found. And while the percentage per number taken would have been reduced, the percentage of positives would have been increased. Most, if not all, of these 60 children had had no medical attention and had not been seriously sick.

In the past ten years 911 cases of diphtheria in which the membrane was confined wholly, or at least largely, to the nasal mucosa were admitted to the Municipal Hospital of Pittsburgh. This is between 10 and 15% of all cases showing positive diphtheria cultures treated during that period. Unfortunately, the total number admitted is not available. The duration of illness before admission ranged between one and twenty-two days. The symptoms were classical, including excoriation of the upper lip, bloody nasal discharge, fullness of the nose, visible membrane, etc. Seventy-four per cent. of cases showed positive cultures and 9.5% remained positive for a sufficient length of time to be classed as carriers. Of these 911 cases the mortality was 2.78%. The general mortality of all cases treated was about 5%.

The statistics of the Municipal Hospital seem to bear out the theory that nasal diphtheria is not common, in that it occurred in but 10 to 15% of cases. Further considering, however, that these patients came almost entirely from our slums, and in most instances a physician would not be called unless the symptoms were severe, these 911 represent rather the number of severe cases than the actual number with the infection in this location. I think it also safe to assume that, in general, some days had elapsed before the physician was finally called; therefore the classical symptoms. The mortality of 2.78% compared to 5% for all cases tends to prove that even in late cases the mortality is quite low if sufficient antitoxin be administered.

The profession at large is gradually, all too gradually I am sorry to say, being awakened to the advisability of culturing all sore throats, however mild. They have learned not to wait for a membrane on the throat of large area and severe constitutional symptoms before making a diagnosis and administering antitoxin. Throat culturing of large numbers in our schools and elsewhere has proved that there are many mild cases, scarcely ill at all. I believe that the same holds true of the nasal variety. I believe that it is a much more frequent location for the membrane than is commonly supposed, and that the reason more cases are not found is because the possibility is not considered and sufficient investigation not made. I believe that visible membrane, bloody nasal discharge, excoriation of the upper lip and toxicity are late symptoms and should no more be waited for than the extension of the membrane to the pillars of the fauces in tonsillar infection. If these symptoms are considered essential, many cases will be missed and the mortality necessarily increased.

REPORT OF CASES

During the fall and winter of 1921-22, I saw 40 cases with positive diphtheria cultures; 15 of these positive cultures were nasal, or 37.5%.

The ages of these patients with nasal infection varied from 9 months to 12 years.

In the three youngest, whose ages were 9, 12, and 18 months respectively, the infection had apparently, from the history, been present for upwards of two weeks. They each had had temperature and bloody nasal discharge. One had, when first seen, marked excoriation of the upper lip and visible membrane. This later case was rather toxic. The others showed only slight evidence of serious illness. All refused antitoxin and all recovered.

Two other cases, a girl aged 8, and a boy aged 10, showed visible membrane. The girl, S. G., had an easily diagnosed faucial infection. She received her antitoxin within the first 24 hours without waiting for a report from her culture, and it was not until the following day that I noticed a silght nasal discharge not bloody in character. Upon examination I discovered a membrane all but plugging one nostril. As her temperature was practically normal, I gave no more antitoxin and she made an uneventful recovery.

The boy, N. H., had a coincident scarlet fever. The membrane plugged one entire nostril, and he had been sick 36 hours when first seen. He had some nasal discharge which was not bloody. Forty thousand units of antitoxin were administered. Though he was quite ill, he made an uneventful recovery.

Seven cases were cultured, having a mucopurulent nasal discharge with or without crusting of the alae and some excoriation of the upper lip. All claimed to have had but a "bad cold" and none had apparently been seriously sick. All refused antitoxin and recovered.

The last three cases were the most interesting. For several weeks periodic cases of clinical diphtheria had been appearing about every ten days to two weeks in a certain school room in one of our public schools. After each new case the throat of each child in the entire room was cultured. Several carriers were found and quarantined. It became evident, however, that the source of the infection had not been found. A combined throat and nasal culture of each child was finally done. All the throat cultures were negative. Three children, however, had positive nasal cultures. When these children were removed no more cases appeared during the remainder of the term. These children had been constantly attending school and beyond a slight nasal discharge, so common during the winter months, showed no evidence of illness. One of these children infected two members of his own family, who had faucial diphtheria.

I am well aware that this large percentage of nasal diphtheria in my cases may have been partly coincidence. As no virulence tests were possible, some of the bacteria may have been of the pseudodiphtheria variety. However, I believe most of the cases were found because I was looking especially for them, and that others may have exactly the same experience.

CONCLUSIONS

While I realize that the number of cases I have reported is perhaps too small from which to draw any positive deductions, I feel that if routine nasal cultures were taken on as large a scale as are those of the throat, the following conclusions would be justified:

(a) That primary infection of the nasal mucosa with the diphtheria bacillus is not infrequent.

(b) That it is often exceedingly mild and is not diagnosed because the possibility of its presence is not considered.

(c) That the symptoms as outlined in the average textbook, with the exception of nasal discharge, either do not appear at all or are late symptoms and are evident only after some days.

(d) That the theory as to the extreme toxicity of this type was derived largely from the fact that only advanced and serious cases were diagnosed.

(e) That the mortality is at least no higher than in the faucial type if sufficient antitoxin be given.

(f) That all cases of severe rhinitis, particularly if unilateral, should be cultured.

(g) That until importance is given to nasal culture equal to that now given to throat culture, many unexplained infections are bound to occur.

(h) That, since many cases are undiagnosed, epidemics will not be controlled until more intensive nasal culturing is done and its importance recognized.

DISCUSSION

Dr. Edward L. Bauer (Philadelphia): It surprised me to know that it is not more generally known or widely felt that nasal cultures are important. In our Department of Public Health we want the nasal culture as well as the throat culture routinely. We urge our medical inspectors to take these cultures as routinely as throat cultures are taken. It is true that a good many of these are of a chronic type, and while membrane may not be seen, there is generally some membrane, more or less extensive, to be found in the nasopharynx.

The old thought that nasal diphtheria was more virulent than other forms still has its adherents, but I think that the feeling is that the blood antitoxin content will help us to establish the intensity of infection with an organism of definite virulence. In other words, one child having an organism with a definite virulence will get a severe attack, while another child who might harbor the same bacillus will not be so severely attacked. We can have diphtheria in different parts of the body, but I do not believe that we can, because of the location of the primary lesion, prophesy the degree of severity. The length of time the patient has had an opportunity to acquire a circulatory toxemia must be considered, and whether the patient has a natural blood antitoxin content or a passive immunity from an injection of antitoxin.

All these things must be taken into consideration and it therefore makes it rather hard to say whether one location is more severe in its clinical aspects than the other. The truth of the matter is that the nasal type is overlooked more frequently, and it is overlooked because the lesion may be in the nasopharynx and not on the septum. It behooves us to make early diagnosis and administer antitoxin promptly and thereby minimize the severity of all cases.

MISTAKEN DIAGNOSIS IN CASES OF SYPHILIS*

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LAUREL, DEL.

A paper prepared by a general practitioner, particularly in the rural districts, must of necessity add very little to medical science in the way of research and investigation. The reasons of course are obvious. The general practitioners do not see the great number of patients afflicted with the same ailment as one who has the advantages of the wards in a large hospital. They see a case now and then, but not in sufficient numbers to warrant any very conclusive deductions; consequently they are not in position to do any meritorious research work with the patient in the home. Their laboratory facilities are limited and their bedside notes and records must be curtailed without the assistance of a nurse, and particularly when a patient is observed for only a short time once a day, or sometimes only once in two or three days. But the thing the physicians can do and the thing they should do is to keep themselves well posted and put into practice every modern therapeutic measure which comes from those who do have facilities for research work, and measures which have been found to have a real value. By so doing they not only become familiar with the newer methods of treatment, and thereby corroborate or disagree with the conclusions of investigators, but they strengthen or weaken the chain of evidence by their correctly reported observation. We believe that the rural physician should report his interesting cases much more frequently than he does, making a point to report his failures as often as his successes.

Many years ago, Dr. William Osler made the statement that if a physician understood tuberculosis and syphilis thoroughly, such a physician could treat the negro race very efficiently. It has been a generally accepted fact that these two diseases have been very prevalent among the American negroes, and it is only in later years that we have come to learn of the great prevalence of syphilis in the white race in this country. It is not the outstanding case of syphilis of which we wish to speak, namely, the textbook picture of primary sore, secondary symptoms and tertiary lesions, but rather that great host of cases who consult us with symptoms referable to every system in the body, and yet symptoms which are typical of no specific disease—those cases which jump from doctor to doctor, being treated by this one for some heart or kidney lesion, by another for gastro-intestinal trouble, by still another for rheumatism, and yet another for tuberculosis or neurasthenia, until finally some fellow decides to do a Wassermann and finds it positive. We all see these cases. Our tendency is to make a snap diagnosis by spending three or four minutes in the study of the case, and three or four weeks in its treatment instead of reversing the procedure.

There is probably no disease which simulates so many diseases as syphilis, and tuberculosis is one of the diseases it imitates most often. We learn by our mistakes, or we should at any rate, and during the past two months I have had two cases come under my observation while doing the work for the Delaware State Tuberculosis Commission which were diagnosed as tuberculosis by me, but which proved to be syphilis. The error was discovered in one case by myself, but in the other it had to be pointed out by a Philadelphia surgeon, much to my chagrin, after I had gone so far as to advise the amputation of a foot in a small girl. The mistake in this case might have been so serious, indeed it came very nearly getting by the Philadelphia surgeon, that it seems worth while to me to report the case, together with the reason for the mistaken diagnosis—a reason which is not excusable, and yet a reason for errors made in a great many cases of diagnosis. I failed to take a careful history, but simply accepted the diagnosis of a nurse who had gotten her information from a surgeon who had operated upon the child, and who had made a wrong diagnosis.

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*Read before the Medical Society of Delaware, Dover, October 9, 1922.

A little girl was brought into my office a few weeks ago by a nurse for what was supposed to be tuberculosis of the ankle. A few weeks previous to this, the child had been a patient in a hospital and had been operated upon, with the hospital records showing that she was suffering from tuberculosis of the ankle. The joint had been opened and the bone curetted. When she came into my office she wore a plaster cast, put on by the surgeon who had operated upon her. The nurse told me the story, gave me the hospital record, and I accepted the diagnosis. I changed the cast from time to time until finally the ankle grew very much worse, broke down and left an ugly discharging wound. We felt that there should be some more necrosed bone removed, so we had an x-ray made, with the report that there was rarification of all the bones of the foot with considerable absorption of the lower end of the tibia. Thorough opening was advised to remove the necrosed bone, and it was suggested that rather large doses of tuberculin be used. The condition grew rapidly worse and it looked as though the whole foot would slough off at the ankle. It seemed as though amputation was the only resort. We decided, however, to send her to a hospital at a seashore for treatment, and she stopped over in Philadelphia en route. The Philadelphia surgeon saw her, took our diagnosis, agreed that amputation was practically all that could be done, but decided to watch her for a few days and clean up the suppurating wound as much as possible before amputating. In the meantime, some one very logically did a Wassermann, which was found four plus. She was placed on intensive mercurial treatment, together with neoarsphenamin in rectal suppositories. In eight weeks the ankle had entirely healed and the general condition of the patient was much improved.

The great lesson to be learned in this case is the fallacy of accepting the diagnosis of another person, regardless of how evident the case may seem at first glance or how much confidence you may have in the diagnostic ability of the other physician. The same mistake was made all the way down the line from the surgeon who first operated upon her to the nurse who brought her to my office with the hospital record. I, in turn, diagnosed the case for the x-ray man, and the Philadelphia surgeon for a time, at any rate, accepted the diagnosis we passed along to him.

It was not a case of not being able to make a diagnosis, for any one of us had sense enough for that, but it was merely our confidence in the ability of the other fellow that made us accept his decree. Indeed, after the true diagnosis was made, one wondered how such a mistake could have gotten by us, since the condition looked very much more like syphilis than tuberculosis.

Moral: 1, take your own case history; 2, make your own examination; 3, accept the diagnosis of no one until convinced it is a correct one; 4, when in doubt, have a Wassermann test made, and when not in doubt, still have a Wassermann test made.

The second case about which I wish to speak is that of an adult male negro who had been at work in Baltimore, and whose occupation was that of a stone cutter. His history was about as follows: Until six months previous, he had been, so far as he knew, in perfect health, but at that time he began to have a cough, feel tired and have more or less malaise. He applied for treatment at one of the best out-patient clinics in Baltimore, was gone over carefully, according to his story, and told that he had a bronchitis, due probably to the inhalation of stone dust. He kept at work for two months, reporting weekly to the dispensary for observation and treatment. At the end of the two months, he had grown so much worse, lost so much weight, had so much temperature, coughed so incessantly and breathed with so much labor that he was told that he probably had consumption, and that his only salvation was to get into the country, and he was advised to leave at once, which he did. Just in passing, let me say that if a great many physicians would say, "I don't know" to their patients, simply be honest with them, we who are in the country would not see so many patients who, when we are called in to see them, meet us with the salutation that their doctor in the city said that it was imperative that they get into the country. It seems to be a sort of unwritten law with some physicians "when stumped" to advise "go to the country."

This negro came to the country, and for three months tried to live in the fresh air, eat nourishing food and abide by his general instructions for a cure. He was treated by a local physician, and told that he would probably not get well. The Baltimore diagnosis was handed down. He finally spent all of his money, and then heard that the Delaware State Tuberculosis Commission would treat him for nothing, provided his regular physician did not care to treat him further, since his funds had been exhausted. There was no difficulty in arranging this matter, so I visited him and was told the story I have just repeated.

On examination, there was no evidence of his having lost a great deal of weight. He looked sick. He was very dyspneic, respirations very shallow, thirty-eight to the minute. His temperature was 102, coughing incessantly, and expectorating a material mixed with blood. He sweated profusely at night, and was very hoarse, which seemed to be getting progressively worse. His chest examination was a difficult one to make. His breathing was very shallow, so that very little could be elicited, except many râles throughout both chests. There was something about it, however, which made one feel that it was not a clear picture of tuberculosis. You felt that there ought to be a great many more physical signs in the lungs of a man so sick with tuberculosis. And yet, with the history, occupation, race, progress, and an examination in a good Baltimore hospital, it seemed a safe guess. His sputum was negative for tubercle bacilli.

We went along this way for several days, during which time the patient grew worse and suffered a great deal of chest pain. Finally, I discovered a tremendous scar on his glans penis, evidently the result of an old chancre or chancroid, which he told me was of six or seven years' duration. Here again, a careful history had not been taken, and a less careful examination made. I had fallen in with the diagnosis of a Baltimore hospital, in which I had the utmost confidence. A Wassermann was made immediately, and reported four plus. The patient was given 0.9 gms. neoarsphenamin for eight weeks, together with mercury intramuscularly. At the end of eight weeks he did not present an abnormal sign or symptom referable to his chest, and had apparently regained his normal health. He insisted on going back to Baltimore to work, and did so, stating that he would report to the dispensary for observation and treatment. I have no further report on his case.

Here is but another case of a syphilitic condition of the lungs diagnosed tuberculosis and a patient who nearly reached death's door, simply because an accurate history was not taken, a thorough physical examination was not made, and an erroneous diagnosis of someone else was accepted as absolutely final and correct.

THE RISK

Frosh (after attending a hygienic lecture): Some terrible things can be caught from kissing.

Second Frosh: Right! You ought to see the poor fish my sister caught.—*Cornell Widow.*

SELECTIONS

SOME COMMENTS ON RADIUM TECHNIC

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The beginner in radium therapy may obtain some fundamental facts regarding radium therapeutics from others but he must finally develop his technic by experience. In dermatology he usually procures a plaque and immediately becomes saturated with theory. He follows more or less closely certain instructions regarding screening or lack of the same and applies his high-priced toy for varying lengths of time to various types of disease. He is really surprised the first time he sees a reaction and further is quite happily shocked to find that he is obtaining some therapeutic results. As time passes he appreciates more and more the value of filtered radium, but nearly always undertreats, particularly where a destructive effect is desirable. He learns that very light filtration is indicated in certain cases and heavy in others. He quickly learns that short applications with thin filters produce reactions quite out of proportion to those obtained with much longer applications through heavy filters. He sees therapeutic results obtained without inflammatory reaction in some cases, while in others he comes to realize that a good reaction is prerequisite. He becomes lost in the maze of milligram hours, millicuries, lead, brass, glass, aluminum and rubber screens, alpha, beta, gamma rays, distance, biological action, etc., but continues the rather uphill fight until he evolves a technic that to him is more or less satisfactory.

Then he learns that if he is going to do the good work he is capable of he must have better equipment and, therefore, buys more radium, usually in the form of tubes and needles. Then he has to begin all over and work out a new technic because he is dealing with a larger amount of the element completely screened so that only the gamma rays or at most the gamma and the highly penetrating beta rays are available from a focal point instead of from a surface. In the case of needles the problem is further involved because the method entails hypodermic introduction of the applicator. And when finally he is satisfied, he finds considerable difficulty in telling others how he obtained his results.

This paper is dedicated primarily to the novice but is offered as a plea for the use of understandable descriptive terms in reporting results obtained in the treatment of disease with radium.

PHYSICS; GENERAL CONSIDERATIONS

In this country radium is supplied in various types of applicators measured in terms of actual radium element contained. The sulphate, bromide and chloride are available, but the sulphate is preferable because the others are hygroscopic, with evolution of gases, and thus have a tendency to explosion with a loss of the radium. Radium gives off invisible radiations constantly and without sensible variation. Alpha rays are the least penetrating, being absorbed by a thin sheet of writing paper. Where they come in contact with the skin they produce a superficial reaction without being of any therapeutic value. They are usually absorbed by the glass walls of containers or by the holding material of applicators. When additional screening is necessary for their removal a thin sheet of writing paper or rubber will suffice. Beta rays vary from those which barely penetrate thin-walled glass containers or the surfaces of plaques, to those that are absorbed only by several mm. of brass. Beta rays are of service therapeutically in certain superficial conditions—in fact they produce results in certain conditions where gamma rays fail. Gamma rays are the most highly penetrating of the rays of radium, and are analogous to x-rays except that they have four times or so greater powers of penetration. This type of radiation is the most important in radium therapeutics. Gamma rays are utilized by interposing substances between the disease tissue and the element capable of absorbing all alpha and beta rays. These substances are spoken of as filters. Depending upon their density and thickness they absorb varying quantities of beta rays. A large variety of filters are available, but there is little of value in more than one, because by preference either beta or gamma rays are used. Multiplicity serves only to confuse the beginner. He had much better have only one filter, for example 1.2 mm. of brass, this being sufficient to absorb practically all beta rays. When beta rays are indicated a thin layer of rubber only is advised. When gamma rays are indicated it is advantageous to screen completely.

EFFECT OF QUANTITY

Inasmuch as radium produces rays at an unvarying rate, necessarily the amount of energy liberated is directly proportional to the amount of element involved. Further, one may anticipate that equal results will be obtained with, for instance, 50 mg. for one hour and with 25 mg. for two hours. While such is not exactly the case, this rule holds within certain limitations, it being necessary to point out that the result obtained by using 1 mg. for 100 hours is not likely to be the same as with 100 mg. for 1 hour, because the time consumed in delivering the total dose to the cell determines to some extent the resulting reaction, as does also the arrangement and bulk of the element. However, in the applicators ordinarily supplied, the amounts of radium are sufficiently large that the man with a comparatively small investment may duplicate the results obtained in ordinary conditions by his more affluent neighbors by making longer applications. I make this statement in cognizance of the fact that it will be noted as heresy, particularly by those with 200 mg. or more of radium. Finally it is to be remembered that intensity varies inversely as the square of the distance is increased or diminished. Thus one necessarily determines biological reactions at certain distances and estimates dosage accordingly when the distance is changed.

TYPES OF APPLICATORS

Radium is supplied in different types of applicators to meet certain indications. In dermatology, surface lesions of varying size are to be treated and in some instances beta rays are definitely indicated; therefore, the element is evenly spread in a glaze or varnish in definite proportion to the size of the applicator. The standard strength of these applicators is 5 mg. to each sq. cm. The applicator most frequently used is the half strength flat applicator 2x2 cm. Full, double, or even greater strength applicators may be used in order that the time factor may be shortened. Plaques should be screened with a thin layer of rubber or similar material in every case to cut out all alpha rays and secondary radiations. Where beta ray applications are desired, the plaque is then applied directly to the lesion for varying lengths of time, depending on the type of the pathology.

One should take care lest he overlap with successive applications, and thus doubling dosage produce severe burns. Beta ray applications are indicated in certain angiomata and discoid lupus erythematosus and are sometimes serviceable in psoriasis, lichen chronicus circumscriptus, verrucae, keratoses, localized lichen planus, etc., and in some cases of superficial epitheliomata. In my hands only lupus erythematosus and angiomata respond better to beta than gamma rays, they being used in other superficial conditions because of a shorter time factor, and ease of application. An unscreened plaque should not be left on the skin longer than a half hour if a good cosmetic result is desired. Longer applications cause heavy reactions and subsequent telangiectasia and scarring. Further, additional treatments should never be given until the reaction from the first application has subsided. It is to be noted that in all of these cases radium is applied directly to the pathology so that, therefore, distance is not considered in computing dosage. With full or double strength applicators the time factor is correspondingly shortened.

THE SCREENED PLAQUE

Where more than a comparatively superficial action is necessary, filtered rays should be utilized. There being no good reasons for half way measures, screening should be such as to allow practically only gamma rays to penetrate. Different substances are utilized, being used in varying thicknesses according to their density. Brass is effective in thickness of 1.2 mm. and is probably more used than any other material. It is to be remembered that all metallic substances exposed to gamma rays emit secondary beta rays. Those rays are comparatively difficult to demonstrate clinically, probably the most frequently noted example being that of the aggravated reaction at the edge following a naked plaque application to the skin. Secondary rays have comparatively little power of penetration and in addition to producing reactions on the skin they limit the amount of gamma rays that may be applied. They may be eliminated by a thin layer of rubber or similar material. The applicator thus screened with brass and rubber may be applied to different types of pathology for varying lengths of time.

As in the case of x-rays, the intensity of gamma rays of radium varies inversely as the square of the distance is increased or diminished. This fact is to be constantly borne in mind when estimating dosage.

COMPARISON OF SCREENED PLAQUE AND TUBE APPLICATIONS

It will be realized that in all filtered applications a definite distance has been established, amounting in plaques with brass and thin rubber filters to approximately 2 mm. Tubes are usually screened with silver and brass of a combined thickness of about 1.5 mm., additional distance being added depending on the thickness of rubber or other materials utilized. Thus minimum distances, whether using tubes or plaques, is approximately the same. Therefore, utilizing minimum proper screening, dosage delivered will necessarily be estimated accordingly. Depending upon whether flat applicators or tubes are used, equivalent dosage may be comparatively readily estimated, remembering that in the one case radiation is from a focal point while in the other an even radiation of a definite surface is available. The plaque delivers a dose composed of parallel and cross rays to a definite area, while from tubes the greatest intensity is necessarily just beneath the tubes. In small lesions this variation may be practically disregarded. While this basis of comparison is open to just criticism on the basis of inaccuracy it is suggested as of practical value in simplifying the question—in other words as a working hypothesis. In larger lesions successive applications of the plaque may be utilized, taking care not to overlap and thus double dosage. Tubes will be placed at intervals, overlapping of rays from the various focal points determining an approximately even application. The location and extent of the pathology will determine to a large extent the distance between these focal points. By a mathematical computation it may be shown that uniform dosage will be obtained at a depth representing seven-tenths of the distance between the points of application. Thus, by estimating the depth and extent of the pathology, proper distance between surface applications may be comparatively easily estimated.

EFFECT OF DISTANCE

Another fact of importance to remember is that it is advantageous in all cases requiring administration of heavy dosage to pathology beneath a healthy skin to place the element a few millimeters more than usual from the surface so that the discrepancy between surface and depth dosage may not lead to severe surface burns. For instance, if heavy dosage is required to a lesion 2 mm. beneath the surface, and the element be placed at the minimum distance from the skin (2 mm.), depth dosage will only be one-quarter of that passing through the skin, but if the element be placed 8 to 10 mm. from the skin, the time factor must be materially increased, and there will be but little disproportion between the dose delivered to the skin surface and the pathology.

NEEDLES

By utilizing radium in needles one is able to bury the element in pathological tissues. Needles are usually placed about one-half inch apart to obtain an even saturation of the tissues. This method has many advantages over surface applications. In the first place, all of the rays are utilized and therefore dosage estimation will be about treble surface applications with equivalent amounts of radium and time. Secondly the subcutaneous tissues will tolerate three to four times that which may safely be passed through the skin, and therefore pathological tissues particularly resistant to radiations may be given lethal dosage without damage to the skin. With such advantages it is difficult to understand why this method of application is not more used.

DOSAGE

The most frequently mentioned unit of dosage measurement is the milligram hour, this being the amount of gamma rays delivered by one milligram of radium in one hour. As noted before, time and amount of radium element are within certain limits interchangeable to determination of total dosage. Thus most authors speak of so many milligram hours as a more or less definite fixed dosage. Such statements are quite inaccurate. In the first place it should be stated whether the element has been fully screened or otherwise, and the distance between the element and the pathology given as accurately as possible, because of the effect on dosage of the law of inverse squares. Obviously a lesion 2 mm. beneath the surface will receive only one-quarter the surface dosage when the thickness of the screening, etc., is approximately 2 mm. It would be much better if in each case dosage was estimated in milligram hours actually delivered to the pathology. This would necessitate some mathematics, but would serve to simplify dosage for the other fellow so that if you said that 125 mg. hrs. to a basal cell epithelioma cured, you actually mean what you say—so many milligram hours to the pathological cell. As previously noted the minimum distance with tubes and plaques is approximately 2 mm. and this is offered as a basis for estimation of dosage. Thus 50 mg. fully screened, applied for 4 hours at 2 mm. would be credited as 200 mg. hrs. To a lesion lying 2 mm. beneath the surface, however, actual dosage would be estimated according to the law of inverse ratio of proportion at 50 mg. hrs. Such estimates could be made fairly accurate, but a further correction should be made in deep work. It has been estimated that absorption of rays by tissues, independent of distance, is at the rate of about 12% to each inch. Such correction can be readily made, but for practical purposes in work that the dermatologist ordinarily sees, may be disregarded. From a practical standpoint, for the sake of comparison in dermatological work, the dose delivered to a skin surface is most important, variations of the factors discussed above determining the intensity, spread and type of radiation requisite for the individual case. To have any real value, reports should include in every case the amount of radium used, the time applied, the screening and the distance from the skin. When needles are used the amount of radium in each needle, the number of needles used, the distance separating them and the length of the application should be mentioned. These suggestions of course apply only where the element itself is used.

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PREGNANCY AND LABOR IN VERY YOUNG AND ELDERLY PRIMIPARAS[*]

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During my term of service at the Maternity Hospital I have been impressed with the remarkably large number of normal pregnancies and labors in primiparous women of sixteen years and under. The Maternity Hospital, originally founded for the protection of unfortunate young girls and women, has cared for a large number of cases of pregnancy in adolescents. In order to study the course and complications of their reproductive processes the records of some twenty years have been analyzed. Few such series have been presented in the literature and it seems that this group might profitably be added. In addition, the histories of four primiparous women, past the age of forty years, which places them well up in the class of elderly primiparas, have been used in comparison. The other group reported range from twelve to sixteen years, inclusive.

TABLE I

Age	*Negro*	*White*	*Total*
12	2	1	3
13	4	2	6
14	10	7	17
15	19	38	57
16	30	44	74
	65	92	157

Social Status: These young girls have all been unmarried at the time of delivery, with the single exception of a fourteen-year-old white girl, who was married to the father of her baby on the day of admission. It is interesting to note that until the age of fifteen years all were listed as school girls or with no occupations; after that year a great variety of occupations was noted, the majority being factory workers. Only one of the group of elderly primiparas was a married woman.

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[*] From The Maternity Hospital of Philadelphia.

Duration of Pregnancy: The duration of pregnancy in this group deviated only slightly from the normal. Two hundred and eighty-one days represented the average length of pregnancy for these 157 women, in the white girls 283 days, in the negroes 278 days. In one case, a thirteen-year-old negro, 302 days elapsed from the date of rape to date of delivery. In two girls who had never menstruated, one a white girl aged 13 years, 280 days elapsed from the date of rape to the date of delivery, and 292 days in a white girl aged fifteen years. The average duration of pregnancy in the four elderly primiparas was 278 days. It is thus seen that the duration of pregnancy is entirely uninfluenced by the age of the gravida.

Complications of Pregnancy: Abnormal conditions during pregnancy have been few. The majority of these girls have been in the hospital for periods varying from a week to several months before the expected date of delivery. The resultant care and constant observation may have eliminated some possible complicating factors; yet their marked freedom from complications is an added evidence of the ability, even in early years, to bear the strain of pregnancy. Eight cases of albuminuria developed. Four cases of eclampsia were recorded. There was one intrapartum attack in a girl who had been in the hospital for but one day, who was delivered with high forceps and recovered. Three cases of postpartum eclampsia occurred. Two recovered, one a negro, aged thirteen years, and one a white girl, aged sixteen years. The last recorded case of eclampsia died. This was a white girl, aged sixteen years, who was admitted for toxemia, had labor induced on the day following admission and was delivered of a baby weighing 4,050 grams, through a justominor pelvis. Within a few hours death occurred in convulsions. No antepartum hemorrhages of any variety were recorded. Two cases of polyhydramnios were recorded, both in sixteen-year-old girls. In one case the baby was born prematurely and died.

Dilatation of the cervix for periods of days and even several weeks before delivery is recorded in many histories. As a rule this finding is quite uncommon in primiparas. It is possible that attacks of false labor may have been responsible for this unusual preliminary dilatation.

Premature Births and Stillbirths: Only two stillbirths were recorded, both in negroes, aged fourteen and sixteen years. The clinical notes strongly suggest syphilis as the responsible factor. The routine Wassermann was not in practice at that time.

Seven premature births are recorded. Three were in fourteen-year-old negroes, two in fifteen-year-old white girls, and two in sixteen-year-old white girls. Six of the babies, including one of a woman with polyhydramnios, died. The remaining baby left the hospital in good condition and gaining in weight. The causes of the premature births are not clearly stated. Syphilis was considered as the cause in the two negroes, but no suggestive notes were found in the other histories.

Three babies born at term died during the first week. One from atelectasis, one from convulsions following a prolonged labor, probably a case of cerebral hemorrhage, and one as the result of high forceps delivery in an intrapartum eclamptic. These eleven deaths give a fetal mortality of seven per cent. One congenitally malformed baby was born, with harelip and cleft palate, to a white mother of sixteen years.

Weight of Babies: The average weight of the babies born to these young mothers was 3,136 grams; of the negroes, 3,044 grams; of the white girls, 3,196 grams. By age groups the averages were: 12, 2,721 grams; 13, 2,755; 14, 2,872 grams; 15, 3,216 grams; 16, 3,189 grams. There was a rather steady increase up to the age of 15 years, noticeable in both races. The smallest baby born at term, to a negro aged thirteen years, weighed 2,452 grams; the largest, in a fifteen-year-old negro, weighed 4,625 grams. Of the elderly primiparas, the weights of the babies ranged from 2,925 to 3,600 grams.

It will be seen that the average weights of the babies were quite on a par with the weights of infants at term of mothers in the third decade of life.

One case of twins was met in this series. The babies were females. They were born to a sixteen-year-old white mother, presented as breech and vertex, and weighed 1,220 and 1,800 grams. They gained and left the hospital in excellent condition.

Pelvimetry: A study of the pelvic measurements showed a certain degree of contraction of the pelves. This may be attributed to immaturity and lack of development, and possibly some deficiency in nutrition. Aside from the justo minor pelves, the largest number of pelvic deformities occurred in the negroes, and comprised six flat pelves, five rachitic flat pelves, and one generally contracted flat pelvis. This is a finding rather to be expected in the negroes, and in this class of cases somewhat increased over the general average due to the fact that in many cases malnutrition and errors in diet as well as childhood labor have had a part in producing the deformity. However, it is interesting to note that cesarean section was not necessary in this series, and that pubiotomy was resorted to but once.

Including all grades and varieties of deformities, approximately 20 per cent of these young girls had some abnormality of the bony structures. Yet in the great majority of cases normal labors occurred—a fact which is of weight in allowing a test of labor in a so-called borderline case of pelvic contraction in an adolescent.

TABLE 2. PELVIMETRY

Age Race	Normal	Justo Minor	Generally Contracted	Flat	Rachitic Flat	Generally Contracted Flat
12 White	......	1	......	......	......	......
Negro	1	1	......	......	......	......
13 White	2	......	......	......	......	......
Negro	2	1	......	1	......	......
14 White	6	1	......	......	......	......
Negro	4	2	......	2	2	......
15 White	33	3	1	1	......	......
Negro	13	2	1	1	2	......
16 White	39	3	......	2	......	......
Negro	24	2	......	2	1	1
	124	16	2	9	5	1

Labor: The course of labor in these young girls was quite normal. The average duration of the various stages of labor in the different groups by age showed no material difference. For those cases which ended spontaneously the average duration of the first stage was nine hours and thirty-five minutes, for the second stage the average duration was two hours, for the third or placental stage, eighteen minutes. This made an average total time of eleven hours and nine minutes, whereas in the elderly primiparas the average duration was ten hours and fifteen minutes, and in all of the latter the labor ended spontaneously.

Operations and Complications of Labor: Pubiotomy and high forceps were necessary to deliver a negress aged fifteen years, with a flat pelvis. The mother made a good recovery and was discharged thirty-five days later with a healthy baby.

Forceps operations were performed eight times. The high operation was used, in addition to the above mentioned case, to deliver in an intrapartum attack of eclampsia, and again in a face presentation, after efforts to convert into a vertex had failed. Forceps were used in the low or perineal stage to deliver two thirteen-year-old mothers, two fifteen-year-old mothers, and one sixteen-year-old mother.

Induction of labor was performed once for flat pelvis in a fourteen-year-old negro, and once in a sixteen-year-old white mother for toxemia.

Perineorrhaphy was performed either as a primary or secondary operation after thirty-seven labors.

In two cases prolapsed hands and arms were delivered spontaneously with the vertex.

The presentations of the vertex showed a surprisingly small number of posterior presentations. However, many of these cases were not examined during labor, or until late in labor, and the correctness of these data cannot be assumed. Four breech presentations and one face presentation were recorded.

Placental Stage: The third stage of labor in these girls was quite uneventful. The placenta was adherent once in a thirteen-year-old girl, but was delivered by the Credé method. In a fourteen-year-old negro manual extraction was resorted to three hours after delivery, when the Credé method failed.

Postpartum hemorrhage occurred in three cases; packing was needed but once.

Puerperium: Puerperal infections were noted in three cases. A fourteen-year-old white girl recovered after 57 days; a fourteen-year-old negro recovered after 38 days. A fifteen-year-old white girl was curetted for fever and foul lochia on the thirteenth day after delivery, and was discharged as cured on the twentieth day after delivery.

Mastitis occurred in two sixteen-year-old white mothers. In one of these the infection necessitated incision and drainage.

One case of saphenous phlebitis was recorded, in a sixteen-year-old negress, after a spontaneous delivery. She was discharged as cured on the thirtieth day after delivery.

Maternal Mortality: Two deaths were recorded in this series. One sixteen-year-old white girl admitted for toxemia died of postpartum eclampsia. One sixteen-year-old negro, delivered spontaneously, had a lacerated perineum. While being etherized on the following day for operation to repair, death occurred suddenly and was attributed to cardiac embolus. The maternal mortality was 1.2 per cent.

SUMMARY

From this study it would seem that adolescents are able to stand the strain of pregnancy, labor and lactation as well as their elder sisters. They seem to bear the brunt of the enormous physical and mental changes of pregnancy well, and in many instances, while earning their livelihood and concealing their condition. The anabolistic tendencies of their developing bodies have enabled them to meet and carry the burdens thrown upon them. The pelves of these girls reflect to a certain degree their immaturity and perhaps, in some instances, their lack of proper nutrition and care in the formative stage. Their labors have fallen well within the normal limits of time. The powers of expulsion have apparently developed as well as in older women.

The average weight of the infants is somewhat below normal, although variations above that level have been in some instances remarkably high. Pregnancy has been of normal length and but little assistance has been necessary for its completion at term. The puerperiums have been noticeably uneventful. The youthful mammæ have functionated normally, and in the majority of cases the breast-fed infants did well while under observation.

In a similar manner the histories of the four elderly primiparas have refuted the oft repeated and mistaken notion that the reproductive act in the extremely young or old primipara is fraught with difficulty and danger. We have seen in this series of cases that the child-bearing act is normal in adolescents as well as toward the end of the child-bearing life.

262 South 21st Street.

THE PROPER DEPTH OF AN ETHER ANESTHESIA

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It is a privilege to consider and present a subject so important and basic in character that all else in the domain of anesthesia seems to bear a vital relation to it.

In the daily routine of a doctor's work, certain duties are performed again and again, and as a result of this repetition, acts are relegated to the subconscious field. The human mind could not stand the wear and tear of a complete mental action in the performance of all physical acts during life; hence it is a blessing that a subconscious condition exists. The proper use of this subconscious field is a very important matter. Things committed to this state should not remain there as archives, but should be in condition, at any moment, to be brought to the field of consciousness to be reviewed and revised. The tendency among hospital interns and doctors to relegate anesthesia and its problems to the subconscious condition, as an archive, is my chief reason for considering the proper depth of an ether anesthesia.

Any doctor can pour ether, but all too few can conduct an ether anesthesia with any degree of skill. An ether anesthesia is one which is produced mainly by ether, together with the use of any agent or other anesthetic which renders the anesthesia more effective, safe, and pleasant.

DEGREES OF SENSIBILITY

The depth of an anesthesia should be such as to enable the surgeon to perform a given operation without interference. When the anesthesia is more profound than necessary to accomplish this end a condition of poisoning results, which is manifest by an increase in postoperative nausea and vomiting with a consequent increase in morbidity, if not mortality. In the consideration of the proper depth we are compelled to take note of the degrees of sensibility in different portions of the body and vary the depths of anesthesia proportionately. Compare, for instance, an anesthesia for a vaginal with that for an abdominal operation. The former has to produce immobility of the limbs with the accompanying unconscious state; while the latter has to produce, in addition to this, relaxation of the abdominal muscles, and have under control the reaction of the viscera subject to operative manipulation. Needless to say, the latter requires considerable depth beyond the former. In this way one should consider the many different organs and parts of the body with a view to determining the relative degrees of sensibility, and having done this, adopt the degree of anesthesia suitable to the part upon which operation is being performed.

EXPERT ADMINISTRATION

The power of adaptation comes to one only through untiring efforts, close observation, abundance of experience and practice. A number of years is usually necessary to accomplish this end. This explains why comparatively few ever develop any degree of skill along anesthetic lines. Before they become to any degree proficient they forsake the field and go into other lines of endeavor, using anesthesia as a stepping stone. Picture, if you will, a doctor aspiring to be a surgeon, who grasps every opportunity to direct his efforts in some other line. How proficient would he become? No one can expect proficiency in any line of work who is not untiring in his efforts to grapple with the problems associated therewith. The principal distinguishing feature of a skilled anesthetist is the power to gage accurately each moment the depth of anesthesia.

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ETHER SATURATION

In the administration of ether, after the patient has been prepared, use very little anesthetic until you have determined how sensitive the patient is to the ether vapor. Let the strength during the conscious period, be governed by the degree of response, increasing the strength of vapor as fast as you can, without producing too great a degree of discomfort. As soon as the unconscious stage is reached, indicated by the beginning of oscillation of the eyeball, the ether pressure in the pulmonary air can be increased, according to actual experiment, from 15 to 26 per cent. In a cumulative way the proper anesthetic tension in the arterial blood is attained, and in a short time the entire circulation and fixed tissues are brought to a uniform tension. This is the point of saturation to the extent of full surgical anesthesia.

Sufficient time must be allowed to accomplish this state. If the pulmonary tension, at any moment, be raised too high, the arterial blood becomes surcharged. This highly charged blood bathes the sensorium, with the result that the symptoms of profound anesthesia are produced so far as the eyes, respiration and other bodily reactions are concerned, but rigidity of muscles exist. If ether is withdrawn, in a very short time this excessive tension is replaced by a deficient depth and the patient is not sufficiently anesthetized. This sudden change from what appeared to be profound anesthesia to deficient anesthesia is produced by the diffusion of the ether in the surcharged arterial blood through the capillaries into the low tensioned venous blood and fixed tissues. The resulting dilution and uniform tension in all the fluids of the body is much less than previously existed in the arterial blood. This indicates that sufficient time must be allowed for anesthetization to permit a uniform tension to exist during the entire progress of anesthesia. When this uniform tension is maintained, a quiet, calm, uninterrupted anesthesia is the result.

Ten to twelve minutes is the average time necessary to produce surgical anesthesia. Some exceptional cases require one half-hour or more to be brought to full tension. When anesthetizing a sthenic patient, it does not seem so necessary to observe the foregoing facts; but when you are dealing with an asthenic patient, having a weak heart muscle, you may at any moment have a fatality by being too rapid in your administration. What is good for the asthenic case, is also good for the sthenic; and any patient, no matter how strong, should receive the benefit of the anesthetist's skill.

SIGNS OF PROPER DEPTH

No sign or combination of signs, which enables one to gage accurately the depth of anesthesia at any given moment, should be neglected. There are signs that are more constant and uniform in their action than others, hence more valuable. The particular sign, in my experience, which is the most constant and reliable, is the oscillation of the eyeball. The motion of the eyeball persists during the varying depths of anesthesia necessary for the different operative procedures, and this motion should never be entirely obliterated. It varies inversely in extent and activity to the depth of anesthesia. In any operation on a given portion of the body, a certain depth is necessary. A certain degree of motion of eyeball indicates a certain definite depth. It remains for the anesthetist to ascertain that particular depth suitable to the particular operation in hand, by the degree of motion of the eyeball. After having done this, in the case of each operation, the anesthetist is in position to say just when the patient is in condition for the operation to proceed. It is rather a difficult and time consuming effort to accomplish this, but once mastered, it is worth all it costs. This is not given as an exclusive sign, but as one of the most constant and uniform in its action under varying conditions to be used in conjunction with all other signs of proven practical value.

In conclusion let me call attention to the following summary statements:

1. Do not assume the responsibility of an anesthesia unless you realize it is one of the most responsible duties in the operating room.

2. If you cannot become interested enough to deal in a serious manner with all the problems of anesthesia, abandon the field.

3. Ether should not be given at such a rate as to cause a surcharging of the arterial blood, but sufficient time should be allowed for the diffusion of the anesthetic so that a uniform tension exists during the entire progress of the anesthesia.

4. The oscillation of the eyeball is the most accurate and constant sign we possess to determine the depth of anesthesia. It should not be used alone, but in conjunction with all other signs of proven practical value.

5. The proper depth of an ether anesthesia is that which has been produced by the least amount of anesthetic agent necessary to render the patient in condition properly to undergo a given operation.

6. It is not an easy task to conduct an anesthesia properly.

6201 Lansdowne Avenue.

A RETROGRADE ESOPHAGEAL BOUGIE

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In most cases of cicatricial stenosis coming to the Bronchoscopic Clinic, peroral esophagoscopic bouginage has been the most satisfactory and safe method of cure.

In some cases however a series of eccentric strictures of long standing have presented a group of conditions that have rendered retrograde dilatation desirable. In a number of cases retrograde esophagoscopy,† using Chevalier Jackson's steel stem filiform bougies, has proved very satisfactory. All retrograde methods are, of course, practicable only in gastrostomized patients.

In cases presenting a series of three or more strictures with lumina of small diameter and located eccentric to each other, the most expeditious and safe method is to draw upward from the stomach by means of a swallowed string the retrograde bougie shown in the illustration. It is made of soft pure rubber of the finest quality, moulded on a braided silk thread which is continuous. When the bougie is drawn into a stricture, the diameter is somewhat diminished by the traction. When the traction ceases and the bougie is allowed to remain in the stricture, the resiliency of the rubber affords continuous dilatation by its expansion. The longer it is left in situ the more lasting the effect. Increasing sizes are used as the lumen of the stricture increases up to No. 30 French scale. When a permanent lumen of this size is obtained the patient can swallow any properly masticated food. Great care is required to avoid rupturing the esophagus by pulling through a bougie of too large size. The use of a larger size should not be commenced until the preceding size comes through easily.

It is found that the bougie with the full diameter engaged in the stricture is most easily removed by drawing it through the mouth, this is explained by the action of the reverse peristaltic wave, excited by the movement of the bougie in the esophagus

As with all other methods of treatment of esophageal stricture, occasional observation for a year or two is necessary to detect any tendency to recurrence.

Results obtained at each dilatation are directly in proportion to the duration of sojourn of the bougie in the stricture. The usual sojourn is a half-hour. The treatment is not painful and after a few treatments the children learn the painlessness of the method. They do not cry and often want to pull the bougie through themselves

The method is, I think, safer than the string methods of Mixter, Abbey and Sippey.

Thanks are due Chas. P. Pilling and Son for the careful working out of the mechanical details.

2117 Chestnut St.

PITTSBURGH ACADEMY OF MEDICINE

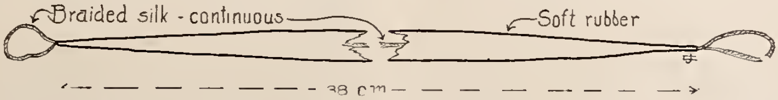
ABSTRACTS

A STUDY OF SOME OF THE MORE FREQUENT ABNORMAL SYMPTOMS IN CHEST AND ABDOMINAL DISEASE

DR. JOS. C. OHAIL

The voluntary nerves run directly from origin to termination, giving off, in their course, branches to the adjacent structures. However, there are no intercommunications between the branches. The sympathetic fibres do not run straight from origin to termination but are exceedingly intricate in their intercommunications with one another, forming a very complicated network, and near where they originate they form large masses called ganglia and axes.

Another point must be borne in mind, and this is that the section of the spinal cord which supplies terminals to a certain surface area of the body also supplies fibres to the sympathetic system at a point whence originate fibres that supply the internal parts beneath that supplied by the coöriginal somatic fibres. For example: that portion of the spinal cord which supplies



Retrograde Esophageal Bougie, to be drawn through the mouth by means of a swallowed string, in gastrostomized cases of esophageal stenosis. The instrument is made in 10 graduated sizes.

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†Jackson, Chevalier: Peroral Endoscopy and Laryngeal Surgery, 1914, p. 537.

terminal branches over the gall-bladder area of the abdomen will also send fibres to the sympathetic cord ganglia whence arise fibres which supply the gall-bladder. This is true of other parts of the body, both thorax and abdomen.

Some illustrations may now be cited to portray more clearly what is meant by the foregoing description.

1. The thorax. It is a well-known phenomenon that there is a skin binding over the site of a tuberculous lesion. This is not limited to this area alone but quite frequently there is found an increased spasticity of the muscles of the neck on the side of the lesion.

2. Then too, there may be noted a pain in the chest, referred from pathology in the abdomen, and vice versa. In the first, to the chagrin of the internist, and in the second to the humiliation of the surgeon, for occasionally we find a pain referred to the chest which is due to an inflamed appendix. On the other hand, not infrequently do we find pain referred to the region of the appendix in case of a beginning pneumonia.

If there is pain, worse after meals, with hyperacidity, one naturally gets the impression that it has to do with the stomach or the duodenum, and clinically one is inclined to view it as an ulcer of one of these organs. The chief point of differentiation is whether the distress is entirely or almost entirely after meals and not at any other time. This will point to a gall-bladder pathology rather than to that of the stomach or duodenum.

A case operated on some years ago gave all the symptoms of ulcer of the stomach save that her distress was after meals and that alone. A removal of her gall-bladder has entirely cleared up her gastric symptoms.

The pain in gall-bladder cases may be at times referred to or below the left breast near the costal margin. About a month ago such a case came under observation with an onset of great suddenness. She suffered such intense agony that a hypodermic of a half grain of morphia was not sufficient to give entire relief. The pain was referred to the costal margin, or just above, in the anterior axillary line. She was removed to the hospital, where she was seen by a surgeon and because of the location of the pain the pathology was in doubt. However, it looked so much like either a gall-bladder or a duodenal case that the abdomen was opened, when quite a quantity of free bile was found in the abdominal cavity. After a stormy convalescence she made a complete recovery.

The appendix is a field whose fruitfulness for trouble is far from being fully appreciated. The laity even think appendicitis is a fad among physicians, yet far from the last word has been said on this subject.

a. *Appendicitis Simulating Gall-stone Colic:* Some years ago a nurse was seen suffering from typical symptoms of a gall-stone colic, both in the character of the pain and its location. At operation there was no pathology in the right upper abdomen. The appendix was found not only retrocecal but retrocolic, with the tip extending almost up to the level of the costal margin. Its removal cleared up the symptoms entirely.

b. *Simulating Gastric Ulcer:* The patient seen some years ago had been under the care of one of the most excellent physicians of the city for something over a year and had been on a very restricted diet because of a supposed gastric ulcer. She would have her distress whether she ate or whether she did not, whether she ate lightly or whether she ate to her full satisfaction. The case was diagnosed as chronic appendicitis. However, a severe acute attack occurred in this case and after a desperate convalescence she made full recovery and has had absolutely no gastric symptoms since.

Another case in which the chief complaint was gas after meals was also entirely relieved by a simple appendectomy. Gastric ulcer had been previously diagnosed in at least two army hospitals and one civil.

The third case complained of pain of three months' duration, located retrosternally, coming on after meals with the formation of a considerable amount of gas. Following an appendectomy three years ago there has been no return of the retrosternal pain or abdominal symptoms.

The fourth case was that of a young woman about twenty-five years of age, who was scarcely ever free from peptic ulcers of the mouth. Sometimes one, sometimes a half dozen were present nearly all the time. They were of large size and so annoying that she could scarcely eat at times. The diagnosis of a chronic appendicitis was made. The diseased appendix was removed and during a four year period of obseravtion there was no return of ulcers.

If that occurred, undoubtedly through trophic impulses brought about by a chronic appendix, why might not the same thing occur in the gastric mucosa, giving rise to ulcers of the stomach?

If the surface of the abdomen is carefully examined for changes in tension of the muscular structures, then many stomach cases will cease to exist, for they will be found to be gallbladder or more likely appendix cases.

Rigidity of the upper right abdomen means pathology there, regardless of the location by the patient of his distress. It may be gallbladder, pancreatic, duodenal or gastric pathology. In the right lower abdomen there is practically but one thing. Appendicitis and rigidity to some extent, are rarely if ever found dissociated.

CONGENITAL TOTAL HEMIHYPERTROPHY

Drs. J. N. Stanton and Louis Tuff

Congenital total hemihypertrophy, characterized, as the name implies, by symmetrical enlargement or hypertrophy of the whole side of the body, is a most unusual and rare anomaly. Its rarity can be appreciated by the fact that in a complete survey of the literature on this subject, but forty-one cases of true hemihypertrophy could be collected. An example of this curious anomaly of development is reported herewith:

CASE REPORT

History: The patient, Miss A. P., a white girl aged 16, was admitted to the hospital June 12, 1921. She complained, on admission, of a small tumor in the left breast which she had noticed for a month previous. This was readily removed later and proved to be a small fibro-adenoma.

In the course of a routine physical examination it was noticed that the entire left side of her body was more developed than the right. This condition the patient stated had been present since birth and had caused her very little inconvenience. Since her right leg was shorter than her left, she was forced to limp slightly to compensate for it. When younger, on account of the increased size of the left side of her tongue, she had difficulty in talking and especially in pronouncing "th's." As she grew older, this became less and less noticeable until at present it was very slight. She had four sisters and four brothers, but all were of average size and nowhere in the family was there a history of a similar condition. When admitted, except for the lump in her breast she felt perfectly well and had no complaints. There was no history of menstrual irregularity.

Physical Examination: The patient was well nourished, weighed 118 pounds and was five feet, five inches tall. There was a distinct difference in size between the whole right and left sides of the body. Measurements were taken to verify this and the differences in size noted are given in the accompanying table. The left cheek was bigger than the right and the left half of the tongue distinctly larger than the right. The thyroid gland was slightly enlarged, probably a juvenile type. The breasts were well developed and the left breast contained a small, freely movable mass in its lower and inner quadrant. The pubic hair was feminine in type and the external genitals well developed, there being no evidence of sexual dystrophy, suggestive of pituitary disturbance. To compensate for the increased length of the lower left extremity the right shoulder was drooped and scoliosis present. Aside from these findings, the rest of the examination was negative.

Laboratory findings in this case were negative. X-rays were taken of the entire bony skeleton, and revealed the fact that the enlargement was present not only in the soft structure but also in the bones of the left half of the body. The pituitary fossa was found to be normal.

TABLE OF MEASUREMENTS

Part measure	*Right*	*Left*	*Difference*
Head—circumference .	10½ in.	11½ in.	1 in.
Width of orbit	2¼ in.	2½ in.	¼ in.
Width across shoulders	8½ in.	9 in.	½ in.
Arm length	12½ in.	13 in.	½ in.
Forearm length	8¾ in.	9 in.	¼ in.
Arm girth	7¼ in.	8¼ in.	1 in.
Forearm girth	7⅞ in.	8½ in.	½ in.
Wrist girth	6 in.	6¼ in.	¼ in.
Middle finger—length .	3⅞ in.	4¼ in.	⅜ in.
Chest—breadth	5½ in.	6½ in.	1 in.
Abdomen—circumference	12 in.	15 in.	3 in.
Abdomen—umbilicus to ant. sup. spine	5 in.	6 in.	1 in.
Pelvis—circumference .	15 in.	18 in.	3 in.
Lower ext. ant. sup. spine to int.	32 in.	34 in.	2 in.
Thigh—girth	17 in.	19 in.	2 in.
Leg—girth	12⅞ in.	14 in.	1⅛ in.
Foot—girth	9¾ in.	10 in.	¼ in.
Leg—length	14¼ in.	15¼ in.	1 in.
Tip of big toe to heel ..	10¼ in.	10¾ in.	½ in.

REVIEW OF LITERATURE

Various names have been used to describe this condition: viz., unilateral macrosomia, hemimacrosomia and unilateral gigantism, but congenital total hemihypertrophy seems to be the most popular. The exact nature of the factors causing this curious developmental anomaly is as yet obscure. That it is congenital and not hereditary, most all authors agree. Various theories have been advanced as to its origin. Some suggest that the condition resembles acromegaly, but no evidence of pituitary disease has been found in any of the reported cases. P. L. Mummery believes it to be due to one-half of the body growing faster than the other half and that this unequal growth is progressive. This has not been the experience of other authors who found that the hypertrophy was usually stationary, any increase being very inappreciable. Thus Ahlfield, Wagner and Moebius reported a case which they separately observed over a period of eleven years and found no difference in the measurements of both sides of the body. That it is truly a hypertrophy and not a hemiatrophy can be readily seen by observation, for the tissues on the unaffected side are well-developed and of normal size and structure. Probably the most logical explanation of its origin is that it consists in an erroneous deviation from the normal course of development in the embryonic period, (Gesell) most likely in the cleavage stage.

Pathologically the condition consists of a unilateral hypertrophy of the soft structure vessels, bones and occasionally the paired organs. Autopsy on several cases has shown that such paired organs as the kidneys, brain or testicle are enlarged correspondingly on the affected side; also that the larger blood vessels, such as the carotid and subclavian, show enlargement on the affected side. In one case (Gordinier) which came to autopsy, examination of the pituitary body and sella showed them to be normal.

The diagnosis of this condition offers no difficulty. Observation is usually sufficient to distinguish it from any other condition which might in any way resemble it. From hemiatrophy it is readily differentiated by the fact that the unaffected side shows no signs of atrophy but is normally formed in every respect. Acromegaly should offer no difficulty either, since it is bilateral, confined chiefly to the hands, face and feet, and is not congenital. Ofttimes, too, changes in the sella turcica and pituitary can be found by x-ray, which does not occur in hemihypertrophy.

ORBITAL CELLULITIS IN SCARLET FEVER

REPORT OF TWO CASES

Dr. W. C. MEANOR

Orbital cellulitis, although frequently met with from other causes, is rather uncommon as a complication in scarlet fever. Two cases are reported, one, a young man of 21 years and the other a girl of 12 years. Both cases had rather severe attacks of scarlet fever, but the nose and throat symptoms were not unusual. The onset in each case was sudden, with severe pain in the corresponding frontal region. There was little or no rise in temperature and no increase in secretion from the eye. Swelling of the tissues of the orbit increased daily until the eyeball remained in a fixed position. There was marked chemosis of the ocolar conjunctiva, and after a few days the cornea was almost entirely obscured from view but the lids remained fairly movable. At no time was there a very marked exophthalmos. In the young man an ulcer developed at the lower sclerocorneal margin and extended over considerable area in the lower quadrant. The swelling of the tissues continued for a period of two weeks, with steady excruciating pain which had to be relieved by opiates. Each day careful examination was made for any sign of localization or pointing, but at no time did it appear, and both cases went on to recovery without suppuration. The two cases ran practically the same course, with the exception that there was no corneal involvement in the girl. She recovered with normal vision. The young man recovered with a vision of 20/30 minus 2 in an eye that had previous to the attack been 20/20 plus.

Iced compresses were used in the beginning but only seemed to increase the pain and the hot fomentations were immediately substituted. The hot fomentations are much more comfortable to the patient, and support the cornea by increasing the blood supply. When the cornea became involved, sufficient atropin was instilled to maintain dilatation of the pupil, and sterile oil instilled to protect the cornea from the air. Iron tonics were given internally. It is important that instruction be given the nurse as to the proper manner of applying the hot fomentations. These should be used at intervals and not kept on continuously. The carrying out of these treatments should never be entrusted to the patient but always to a competent nurse.

If the cornea should be destroyed and a general panophthalmitis develop, enucleation should not be done, but rather an eviceration of the globe, being careful to remove all remains of the choroid and retina. The enucleation can be completed at a later date after all inflammation has subsided. The great danger of orbital cellulitis and suppuration is extension to the membranes of the brain followed by meningitis.

The importance of the proper care of the nasal cavities in scarlet fever cannot be overestimated.

COMPLICATION OF DUODENAL ULCER

Dr. N. P. DAVIS

Duodenal ulcer usually selects adults between 30 and 50 years of age. Gastric ulcer just across the pylorus has a predilection for females under 30. The patients here reported perforated in the first portion of the viscus and on the anterior or anterolateral aspect; 92% of all ulcers are found in the first portion of the duodenum and 60 to 70% of these occupy the anterior wall.

The symptoms of duodenal ulcer are very plain and easily interpreted. They consist principally of pain from one to three hours after eating and pain relieved by eating or drinking at night. This latter is often so constant that the patient places a cup of milk and a few crackers near his bed so that he can eat and get relief when his pain comes on. These patients, on close questioning, state that they feel well when the stomach is full. This means that the pylorus is closed and no food is passing over the ulcer.

It is a fact that some patients are seen with acute perforation who deny ever having had stomach distress. Three patients gave a typical history of pain relieved by eating, and two stated that they had never had the slightest gastric discomfort. Not one of these patients had vomiting and none gave a history of melena. This latter symptom could easily be overlooked, however, as small amounts of blood with stool could be detected only by laboratory means.

Perforation is said to occur in 25% of all duodenal ulcers. Four of my patients came after acute perforation, and one after a chronic leakage and formation of a localized abscess against the gall-bladder. Alcohol is thought to be a causative factor in the production of perforation. None of this group used alcohol to any extent.

This group of patients were all seized, while at work, with acute violent pain in the epigastrium. Pain was the main and almost the only symptom during the first two hours. When examined by the family physician each patient showed marked rigidity and much tenderness in the upper abdomen. After a few hours had passed a slight elevation of temperature and increase of pulse were recorded.

The prognosis in all patients of this type must and does depend largely on the promptness with which they come to operation. In the stomach and duodenum very few organisms are found normally, and this point gives the early operative procedure an excellent outlook.

Three of the patients were operated during the first six hours after perforation. In each case the perforation was sutured, reinforced with a tab of omentum, the peritoneum dried and closed routinely. Each incision closed primarily, and two of the patients are entirely well at present.

One of the three remained well and went about his work until November 3, 1922, when he was suddenly seized with acute, severe pain in his epigastrium. He did not vomit. He exhibited marked general rigidity and tenderness in the epigastrium and right hypochondrium. Pains were referred upward into his chest. A hypodermic was given and the patient advised to go to the hospital. His abdomen was somewhat rigid and quite tender over the gall-bladder. Temperature 101°; pulse 96; respiration 24; leukocyte count 15,500. The condition appeared like one of acute cholecystitis, and a waiting program was followed. Five days later he showed an indefinite mass in the region of his gall-bladder. Incision proved that he had developed a second ulcer below the scar of the former one and that a chronic perforation had taken place. The gall-bladder and hepatic flexure had become adherent to the duodenum, and when these were separated a small abscess was found. The perforation was in plain view on the anterior surface of the duodenum. Much induration surrounded the point of perforation. In the presence of pus a posterior gastro-enterostomy did not seem indicated. The opening was closed with one stitch of chromic catgut and buried with a purse-string catgut. This was reinforced with a tab of omentum. The patient has not vomited and now, fourteen days after operation, he looks quite well.

The fifth and last patient, 48 years of age, had never had stomach symptoms until 36 hours before admission, when he was suddenly seized with acute, violent pain in his epigastrium. He did not vomit and his pains were not referred. He showed definite tenderness and rigidity in the upper abdomen. He refused to go to the hospital until 36 hours later, when he decided that he was worse and must take the advice of his physician.

On admission he was sick and anxious. Temperature 102°; pulse 130; respirations 26. Marked general abdominal tenderness and rigidity were noted. The tenderness seemed slightly more marked above the level of the naval, and on the strength of this, a high right rectus incision was made. The general peritoneum was intensely inflamed and flooded with smoky serum, bile and glairy mucus. On the anterior surface of the duodenum a perforation that would admit a match-stem was seen. Marked edema and induration surrounded this opening. The opening was closed and buried with catgut and reinforced with a tab of omentum. At this point it seemed perfectly clear that the duodenum was obstructed sufficiently to function poorly or not at all, and gastro-enterostomy was the only alternative.

In the presence of such a general peritonitis, it was deemed unwise to enter the cellular tissue back of the colon and stomach. Therefore, a loop of the jejunum was anastomosed to the anterior surface of the stomach. The patient's recovery was extremely stormy. His abdomen remained rigid and no peristalsis was heard for several days. He was given liquids by bowel and under the skin only. Every few hours he vomited bile. On the morning of the fourth day the vomiting stopped and his abdomen began to soften. His incision suppurated and opened widely. There was no leakage of duodenal fluid. From the fourth day onward he improved, and went home thirty-one days later. A very large ventral hernia developed and he came about a year later for repair.

At this operation the stomach, duodenum and gall-bladder were so completely covered by adherent omentum and colon that nothing could be told about their mechanical state. The patient was symptomless as far as his stomach was concerned. His hernia was repaired, primary union followed, and he went home in good condition.

OXYGEN WITH CARBON DIOXID IN RESPIRATORY DEPRESSION AND ANOXEMIC DISEASE

J. R. McCURDY

The administration of oxygen in operating room emergencies and in certain diseases which develop anoxemic states has been indifferently accepted by physicians for many years. Its real value has, however, been missed in the vast majority of cases, because of careless, unscientific methods and lack of proper apparatus.

To emphasize its usefulness, especially when combined with carbon dioxid, in certain respiratory conditions, and to suggest better methods of administering oxygen, is therefore, the object of this paper.

Perhaps the most frequent anesthesia accident, or error, in nearly every hospital—in this country, at least—is *overdosage of ether*. It is in this class of cases that 10% CO_2 and 90% O proves most useful. The familiar picture of a limpid, perspiring, ashen-hued patient with slow, shallow, small, jerky respirations; weak, rapid, thready pulse; blood pressures down to the question-mark level—such a picture may be changed in the brief space of a dozen breaths to one of full, regular respiration; pink-hued skin; full, slower, regular pulse; ascending blood pressures and some appearance of tonicity in the musculature. To contend that patients should never be forced into this state of ether toxicity is simply "begging the question" although quite true. It does occur very often, and in the hands of expert anesthetists not infrequently, hence must be reckoned as an anesthetic accident.

In the critical postoperative period, especially the first two or three hours, when we so often see a weak, shallow, insufficient respiration, due to reaction following the exaggerated respiratory effort during anesthesia, depression of deep stage etherization and surgical shock, the beneficent effect of "10-90" is most gratifying. Our use of the carbon-dioxid-oxygen combination in these cases differs from the excellent work of Henderson, Haggard and Coburn, in that oxygen instead of air is exhibited with the CO_2, and by open inhalation instead of closed or semi-open method, and no attempt is made to measure the volume of CO_2.

In all these conditions, it will be noted, we are confronted by the symptom of depressed respiration—insufficient ventilation with resultant suboxygenation and its concomitant evils. The indication is, of course, respiratory stimulation in order that more oxygen may be supplied to blood and tissues from greater minute-volume of air. Drug treatment by hypodermatic administration of alkaloids and other means is disappointing and of little real value in emergency work, because of its slow action and uncertain effect. In carbon dioxid, there is a prompt acting, unfailing and natural physiologic respiratory stimulant quite safe in 10% or lower mixture. The mechanism of respiration is quickly revived and ventilation increased. Now if at the same time, one exhibits to the lungs a volume and concentration of pure oxygen considerably greater than is contained in air, the distressing and harmful symptoms of low blood pressure, weak, rapid heart action and cyanosis are relieved, and impending death or the later serious injury to nervous system and vital organs may be averted.

Ample evidence exists to prove oxygen a most valuable therapeutic agent in all conditions associated with acute suboxygenation, notably pneumonia, severe hemorrhage, acute bronchitis, pulmonary edema, acute cardiac failure and carbon monoxid poisoning in addition to the emergency states above mentioned.

Pneumonia—lobar and bronchial—being of such frequent incidence, is the disease in which oxygen therapy is most often called for, and if *properly applied* it is of very great value. Failure to obtain good results has been due to *insufficient dosage*, that is, failure to exhibit to the lungs and blood stream a volume and concentration of oxygen in large excess of atmospheric oxygen. Like many other medicaments it must be given in amount and frequency of dosage, to yield visible and positive effects. In pneumonia the guides to dosage are, as pointed out by Barach, 1st, the degree of cyanosis, 2d, the pulse rate, 3d, the mental condition. Cyanosis should be reduced or entirely dissipated within two to five minutes inhalation, except in the advanced cases where heart failure and venous stagnation have developed. If such relief of cyannosis is not obtained the dosage is too small. The inhalation should be intermitted as soon as the color is markedly improved, and the duration and frequency of intermission determined by the return of cyanosis. One case may require almost continuous treatment, while another will show sustained improvement by inhalations of two to five minutes out of each 20 or 30.

The pulse rate will be slowed several beats, and possible irregularities improved, during the inhalation, but will gradually return to previous state as does the cyanosis. But progressive improvement will be noted as treatment is continued over several hours.,

For the administration of pure oxygen in the various anoxemic diseases above mentioned—"oxygen feeding," so called—many devices have been contrived. Most of them—as the oxygen chamber, metabolism apparatus and the like—are more or less complicated, expensive and impractical for every day use. The common wash-bottle-tubing-funnel outfit is well nigh useless and is a costly method, owing to its wastefulness of high-priced oxygen. Meltzer estimated that this method added not more than 2% oxygen to the inspired air. Physiologists agree that the administration should be by closed or semi-closed method, a portion of the expired air and gases being rebreathed and the balance either blown off through an expiratory valve or conducted through a reservoir of soda-lime to remove CO2 and returned to the inhaler for inspiration. The latter method reduced greatly the amount of fresh oxygen consumed.

Frederick B. Utley, M.D., Secretary.

PITTSBURGH OPHTHALMOLOGICAL SOCIETY

January 8th, 1923

Dr. Edward A. Weisser, Presiding

NEUROPARALYTIC KERATITIS; ENUCLEATION WITHOUT ANESTHESIA

Dr. Edward Stieren reported the case of A. B., male, aged 46, who presented himself December 29, 1922, with a letter from Dr. Harvey Cushing which stated that, as a result of an operation for the removal of an acoustic tumor, the seventh nerve was inevitably destroyed and the root of the trigeminus was severed, leaving the right side a combination of facial paralysis and total fifth nerve anesthesia.

Although the patient stated that he had had no trouble or discomfort with the right eye for a period of ten months following his brain operation, the right cornea was found to be at least one-third smaller than the left and was generally hazy, with yellow deposits in its stroma. There was a small hypopyon present.

The conjunctiva was moderately injected and the lower lid had the typical sagging of a seventh nerve paralysis, with moderate epiphora. The eye and the right side of the face were totally anesthetic.

Enucleation was advised and cheerfully accepted. It was performed without any anesthetic at the Columbia Hospital, January 3d, 1923.

Several interesting observations were made during the operation. First, there was absolutely no sensation to the patient, who followed the various steps of the operation with great interest. Secondly, the conjunctiva bled much more profusely than is usual, and rather firm adhesions were present in an area half way back to the equator, indicating that a low-grade inflammatory process of the anterior segment of the eye had been going on for some time. Thirdly, the patient, when asked to describe the sensation when the optic nerve was divided, declared that the only sensation he felt was hearing the snip of the enucleation scissors; there was absolutely no sensation of light, although the eye was capable of distinguishing a moving hand at one foot.

Postoperative hemorrhage was more profuse than is usual, due, no doubt, to vasomotor paralysis; it was readily checked with hot compresses.

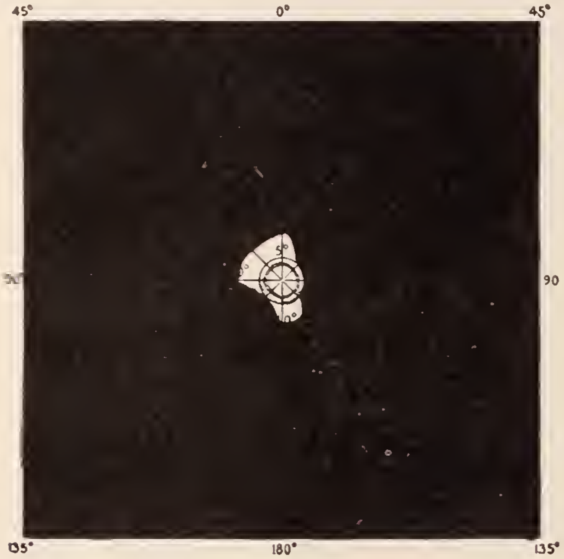
If a glass eye cannot be worn satisfactorily on account of the sagging of the lower lid, an external tarsorrhaphy will be performed.

RETINITIS PIGMENTOSA

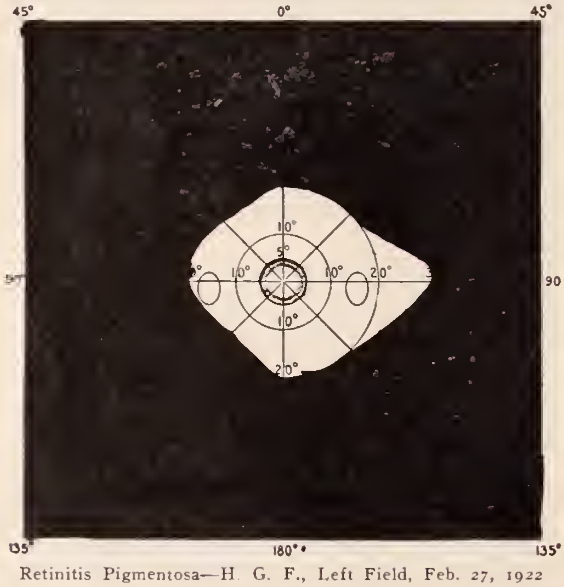
Dr. Edward Stieren exhibited the case of H. G. F., male, aged 37, who has been under observation since February 24, 1922. At the first visit, vision in the right eye was 6/20–, which was improved to 6/15– with lens plus 0.50 cyl. axis 180°; in the left eye, vision was 6/20–, which was improved to 6/15 with lens plus 0.50 cyl. axis 180°. Pupils were normal in size and reaction. Tension was normal in each eye.

The accompanying fields were taken at that time and have not changed materially to date. Patient has been taking constantly strych. sulph. gr. 1/20 and ac. phosphoric dil. m xx, three times daily. Vision in the left eye, with correction, has improved to 6/12. There has been no change in the vision of the right eye, but binocular vision is 6/8.

The fundus shows the typical narrowing of the retinal vessels. While the bone corpuscle pigmentation is not so marked, occurring only occasionally, there is a general pigmentation of the retina, especially in the periphery.



Retinitis Pigmentosa—H. G. F., Right Field, Feb. 27, 1922



Retinitis Pigmentosa—H G. F., Left Field, Feb. 27, 1922

George H. Shuman, M.D., Secretary.

NEW AND NONOFFICIAL REMEDIES

Bacillus Acidophilus Milk-Lederle.—Whole milk cultured with *Bacillus acidophilus.* It contains not less than fifty million of viable organisms *(B. acidophilus)* per Cc. During recent years reports have been published which indicate that the growth in the intestinal canal of the normally present *Bacillus acidophilus* may be increased so as to make it the predominating organism, by the administration of milk inocculated with *B. acidophilus,* by the administration of viable cultures of *B. acidophilus* in conjunction with lactose (sugar of milk) or by administration of lactose alone. The therapeutic value of cultures of *B. acidophilus* is still in the experimental stage. For a discussion of the actions and uses of lactic acid ferment preparations, see *New and Nonofficial Remedies,* 1922, p, 156. Bacillus acidophilus milk-Lederle must be kept on ice and should be used within one week of the expiration date which appears on each package. Lederle Antitoxin Laboratories, New York (*Jour A. M. A.,* Feb. 3, 1922, p. 323).

Theocin Sodium Acetate.—A brand of theophylline sodioacetate—N. N. R. (See *New and Nonofficial Remedies,* 1922, p. 357.) Winthrop Chemical Co., New York. *Jour. A. M. A.,* Feb. 10, 1923, p. 401.)

Diphtheria Toxin and Control for Schick Test—P., D. & Co.—Diphtheria Immunity Test (*New and Nonofficial Remedies,* 1922, p. 320,), marketed in packages containing one vial of 0.1 Cc. of undiluted, standardized diphtheria toxin, one vial of 5 Cc. of sterile physiologic solution of sodium chloride, one vial of 5 Cc. of diluted control of Schick test and one sterile syringe point. Each package contains material sufficient for fifty doses. Parke. Davis & Co., Detroit, Mich. (*Jour. A. M. A.,* Feb. 17, 1932, p. 475).

Schick Test—Lilly.—A diphtheria immunity test (see *New and Nonofficial Remedies,* 1922, p. 320) marketed in packages containing one vial of diphtheria toxin sufficient for ten tests and a vial of sterile physiological solution of sodium chloride and in packages of ten vials containing toxin sufficient for one hundred tests accompanied by ten vials of sterile physiological solution of sodium chloride. As a control, the Schick test control, representing diphtheria toxin of the same lot treated to destroy the specific exotoxins is supplied. Eli Lilly & Co., Indianapolis, Ind. (*Jour. A. M. A.,* Feb. 25, 1922. p. 553).

PROPAGANDA FOR REFORM

Ginseng.—Ginseng has found no place in modern therapy. However, it has been reported that infusions of the extract of ginseng root are diuretic. But the most recent study has shown that the drug does not affect the nitrogen metabolism. Even the quack would find it difficult to discover a tenable potency on the basis of which the use of ginseng should be "boosted." (*Jour. A. M. A.,* Feb. 3. 1923, p. 328.)

Mercupressen.—From the advertising issued by the Barsa Chemical Co., Inc., 28 W. Twenty-third St., New York, for Mercupressen, this product is essentially the same as that which the Spirocide Corporation, 28 W. Twenty-third St., New York, marketed as "Spirocide." Spirocide was claimed to be composed of metallic mercury, copper sulphate, cypress cones, henna, nutgalls and dried pomegranates. The product was sold in the form of tablets. For use the tablets were ignited and the fumes inhaled by the patient. The Council on Pharmacy and Chemistry held that the claims for Spirocide were unproved and unwarranted and that the routine use of an inexact method for the administration of mercury is detrimental to sound therapy. The Council's rejection of Spirocide was subsequently fully sustained by the investigation of the inhalation treatment of syphilis carried out by Cole, Gericke and Sollmann. (*Jour. A. M. A.,* Feb. 3, 1923, p. 344.)

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EDITORIALS

THE ATLANTIC MEDICAL JOURNAL.

With this issue we present the first number of the Atlantic Medical Journal. It combines and continues the journals of the Medical Societies of Delaware and Pennsylvania, becoming the official organ of these two societies. It marks a new era in medical journalism in the East; the reason for its appearance was alluded to in the announcement of its publication in the January issue of the *Pennsylvania Medical Journal.*

We greet our brethren from Delaware and hope that through the medium of this journal a new and strong bond of professional friendship may be formed which shall be of mutual advantage. May we indulge in the hope that the combination of our journals may be the wedge which shall eventually bring about a consolidation of the publications of the other societies of the border states, a consummation which the late Dr. Alexander Craig believed would bring unusual prestige to the medical profession of this section of the United States.

With this advent passes the *Pennsylvania Medical Journal* of which we all have been proud. Its history is a most interesting one, as can be seen in that illuminating article in the May, 1921, issue, by our late editor, Dr. Stevens. A brief summary may be apropos.

The first suggestion for the publication of the transactions of our state society was made in 1883 by Dr. William Varian, president of the society, in his address. The suggestion was apparently premature and fell upon barren soil, and for eleven years nothing was done.

In 1897 the first issue of the journal appeared, under the management of Dr. Adolph Koenig, of Pittsburgh. It is of considerable interest to note that it was "the first of the state medical journals, which now number thirty-three publications, representing forty state societies." In 1904 Dr. C. L. Stevens became the publisher and editor and continued as such until 1920, when he relinquished all right to and interest in the Journal. It then became the property of the Society, and has since been published under the supervision of the Publication Committee of the Board of Trustees.

When Dr. Koenig accepted the position of publisher he determined that the Journal should be strictly ethical, and the Society was obligated to this principle. Dr. Koenig was aware that his stand would compel a rejection of considerable advertising material, with its large income, a matter of no little importance to a publisher. He stood by his determination, and his successors have followed in his footsteps, so that up to this time all preparations not having the sanction of the Council on Pharmacy and Chemistry of the American Medical Association have been barred from its advertising pages. To this same policy the Atlantic Medical Journal is committed, and it will endeavor to stand between the profession and the proprietary medicine evil.

We bespeak for the newcomer your careful consideration and hearty coöperation, two factors essential to every enterprise. We would have you feel that it is *your journal* and that in a large measure you will be responsible for its future. Kindly criticism and timely suggestions will be welcomed in an endeavor to make this publication worth while.

The Publication Committee of
The Medical Society of the State of Pennsylvania.

BISMUTH IN THE TREATMENT OF SYPHILIS

Sazerac and Levaditi in 1921[1] and 1922[2] reported the results of their experiments on bismuth compounds—bismuth ammonium citrate, lactate, subgallate, oxyiodogallate, and sodium and potassium tartro-bismuthate, in the treatment of rabbit syphilis. They observed that these salts of bismuth possessed a spirocheticidal action. The least toxic and most effective was sodium and potassium tartro-bismuthate which they proposed for treating human syphilis, and were the first to employ, using it in an oil suspension by intramuscular injections.

Subsequent to this study they reported equally favorable results in the treatment of rabbit syphilis with precipitated bismuth as with sodium and potassium tartro-bismuthate. The compound was injected in oil suspension. It, therefore, appears that the metal bismuth is the active spirocheticidal agent in bismuth compounds employed in the treatment of syphilis.

As a result of the elaborate researches of Sazerac and Levaditi the clinical use of bismuth as an antisyphilitic drug has been made possible. The favorable results reported by them in the treatment of human syphilis with sodium and potassium tartro-bismuthate were confirmed first by Fournier and Guenot,[3] who reported on its employment in the treatment of 200 syphilitic patients in different stages of the disease. Other reports, mostly French, have since appeared, until now a considerable number of syphilitic patients in all stages of the disease with diverse manifestations have been reported treated with the drug. In most of these reports, sodium and potassium tartro-bismuthate in an aqueous solution and in oil suspension were used.

The foregoing reports show that bismuth is therapeutically active when employed in the treatment of human syphilis.

Sodium and potassium tartro-bismuthate is administered solely by intramuscular injection. The drug is very toxic when administered intravenously in rabbits. It is administered either in an aqueous solution or an oil suspension. The former in doses of 0.1 gm. in 1 c.c. every other day, the latter in doses of 0.2 gm. in 2 c.c. of oil every fourth day. Most French writers favor the oil suspension of the drug since it is considerably less painful.

A course of treatment consists of a total administration of 2.5 gm. to 3 gm. of the drug given in the course of six to eight weeks. A rest period of about one month is instituted, then a repetition of this treatment until the Wassermann test is maintained negative.

Spirochetes disappear from the surface of open syphilitic lesions usually twenty-four hours after the administration of 0.2 gm. of the drug. Lesions of primary, secondary and tertiary syphilis involving the skin and mucous membranes involute after a total administration of the drug ranging in amounts from .4 gm. to 1.5 gm.

The four plus Wassermann reaction of most patients in early secondary syphilis, previously untreated, and in the late secondary stage becomes negative following the total administration of bismuth in amounts ranging from 1.5 to 3.0 gm. The four plus reaction of primary syphilis becomes negative after a lesser amount of the drug, and is somewhat proportional to the duration of the chancre. The four plus Wassermann reaction of tertiary syphilis requires varying amounts of bismuth treatment and cannot arbitrarily be stated.

The initial untoward reaction of bismuth is a foul breath and gingival blue line, which is indistinguishable from that seen in plumbism. These reactions may appear following a total administration of 1.5 gm. of bismuth. This however, is exceptional. They usually appear following the administration of about 2.5 gm. Depending upon the intensity of bismuth therapy, the foul breath and the gingival blue line forecast the appearance of stomatitis and are associated with it. The incidence of stomatitis is intimately associated with the intensity of bismuth treatment and the hygienic condition of the mouth of the patient treated.

Other untoward reactions are chills and fever occurring soon after an injection of bismuth, loss of weight, anorexia and malaise which may appear after prolonged treatment with bismuth. Less common reactions are polyurea, enteritis, and cutaneous reactions. Bismuth, as employed in the treatment of syphilis, apparently does not exert a nephrotropic action.

It is known that relatively enormous doses of bismuth can be taken by mouth without producing signs of intoxication. This is probably due to the fact that very little is absorbed by the digestive tract. Although at times following oral administration of large amounts of bismuth, signs of intoxication may occur, these signs also occur following absorption from wounds and when injected in the form of Beck's paste. Absorption is more rapid following the therapeutic use of bismuth by intramuscular injection. It is logical to believe that following this treatment any of the symptoms of bismuth poisoning with which we are familiar may appear. There is doubtless much to learn regarding the untoward reactions from the prolonged administration of bismuth by intramuscular injections. The bismuth therapy of syphilis is too recent to have given us full information in this regard. This therapy must still be regarded as in the experimental stage not only concerning the effectivity of the drug as an antisyphilitic agent but also regarding its toxicity. It is, therefore, a matter of considerable importance that one practicing bismuth therapy of syphilis should be cognizant of the symptoms of bismuth poisoning and to watch for the appearance of these symptoms. In the bismuth therapy of syphilis, as in the treatment of any infectious disease, the principle in therapeutics, namely, the importance of treating the patient as well as the disease, should not be neglected.

The advantage of having another active antisyphilitic drug in the treatment of human syphilis is obvious. Bismuth therapy is particularly advantageous in the treatment of syphilitic patients who are hypersensitive to arsphenamin so that the use of the latter drug is restricted, or contraindicated.

Another possible advantage of bismuth in the treatment of syphilis which is of considerable importance, although based upon theoretical considerations, concerns the occurrence of neurorecidive following the use of arsphenamin. The baneful action of irregular or lapsing treatment with arsphenamin is well known. Such treatment greatly increases the incidence of early neurosyphilis. Ehrlich's explanation of this phenomenon, is perhaps the one generally accepted. He explained the occurrence of neurorecidive upon an immunologic basis. He pointed out that, "In these patients the greater number of spirochetes are destroyed by the powerful spirocheticidal action of salvarsan. So rapidly is this accomplished that the usual tissue immunity which develops as a result of contact between parasite and host is lacking. As a result, a small focus of spirochetes in the tissue of the central nervous system which may escape the action of salvarsan, develops in the susceptible host with great rapidity and severity? In other words, a few injections of arsphenamin, the cessation of all other treatment, inhibits the consummation of immunological responses of the host to the parasite and doubtless produces a condition analogous to that existing in the primary incubation period in which there are spirochetes and no immunologic reaction.

Bismuth, on the other hand, by reason of a spirocheticidal action less energetic than arsphenamin and perhaps by virtue of intramuscular administration, does not, in all probability, inhibit immunologic reaction of the host to such an extent as it is thought arsphenamin does. One would, therefore, expect a lessened incidence of early neurosyphilis following irregular and lapsing treatment with bismuth.

It is a significant fact that the known spirocheticidal drugs are heavy metals or their salts—mercury, vanadium, antimony and bismuth. Arsenic is no exception to this, since the metal arsenic, *per se*, is not spirocheticidal. Moreover, arsenic, antimony, vanadium and bismuth are in the same group of periodic arrangement of the elements. A priori, it would be interesting to know if other closely allied heavy metals, for example thorium and other allied metals or their salts such as cerium, tin, germanium and tungsten, possess spirocheticidal activity.

J. V. K.

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THE ETERNAL QUEST

It was not a mere coincidence that Hippocrates was a great naturalist and Galen a great engineer; that Avicenna was a mathematician, philosopher and poet; that the greatest anatomist of the middle ages was also the greatest painter as well as a sculptor and musician; or that Queen Elizabeth's physician was the father of modern electricity.

All were insatiable seekers after truth. It is this search for the absolute truth that gives life its zest. It is this search that attracts the greatest, the keenest intellects. It is the vital occupation of active minds. Add to this mental activity a feeling of sympathy with human suffering and an impulse to relieve it, and you have the physician, the practical sociologist. After spending several evenings with Macleod's fascinating book, "Physiology and Biochemistry in Modern Medicine," one is thrilled with the power of scientific research.

The geologist, the physiologist, the chemist, the philosopher, the painter, the musician, and the clinician all alike are dominated by an inspired imagination. All are striving for truth. All are philanthropists. By getting in touch with such as these, whenever possible, we broaden our own lives, increase our efficiency, and enhance our contentment by giving life a deeper meaning.

L. L.

HOW TO PUNCTUATE A MEDICAL PAPER!

A Cartoon in Words

Dr. Jiggs was writing a paper to be read at the next meeting of the Calivania State Medical Society. It was hard work and Dr. Jiggs wrinkled his brow and tore his hair in vain.

Now, be it known to all concerned that Dr. Jiggs was an eminent man in his profession. He had made a name for himself by his remarkable work in the new science of endicro-terminology. But Dr. Jiggs was no literateur. He was a doer, not a mere coiner of pretty phrases. However, he had received his training in the Resourco Medical School, where the teaching aimed to make the graduates men of resource—self-dependent and capable of meeting any emergency without turning a hair. In other words, it aimed to make them red-headed, metaphorically speaking!

As before said, Dr. Jiggs never let a little thing like a stone wall or a comma stop him. He hiked right over without waiting to see what damage he might have caused in his flight, physical or oratorical. But this was a serious occasion. He was writing a paper by invitation; and everyone knows that is an important procedure. Thereon hung his future reputation; and try as he would he could not fit the right punctuation to the right phrase.

Page after page he wrote, only to fling it in disgust into the wastebasket, until this capacious receptacle was filled to overflowing with the outpourings of his genius. Time was pressing. What *was* he to do?

"Alas!" he cried in despair. "Unless Fate comes to my rescue all is lost!"

But Dr. Jiggs was no quitter, and he gathered his forces together for one last desperate effort. "Tap, tap, tap" went his faithful typewriter, as he hunted and punched key after key. So intense was his effort that he forgot the flight of time, and it was well after midnight when he picked up his completed manuscript with a dissatisfied frown. It was not what he had wanted. True, the substance of his message was there, but something was lacking—something so vital that when the paper would appear in cold type, robbed of Dr. Jiggs' vitalizing presence, the effect would be a flat failure. The punctuation was abominable.

"————!" exploded Dr. Jiggs. But it was too late to mend matters. The meeting was to take place the next day, and Dr. Jiggs had barely time to catch his train to the convention city. So he stuffed the manuscript in his pocket, trusting to the Fate that had so often saved him from disgrace to come to his rescue again.

Strangely enough, he who trusts in Fate seldom trusts in vain.

Several months later, the editor of the Calivania Medical Journal shook his head dubiously. He had done his best to edit the eminent Dr. Jiggs' paper, but the result was far from satisfactory. It was a great disappointment. The address had been so glowing, so vital; and the audience had been swept along on a wave of enthusiasm by the Doctor's magnetic personality. But in cold type—frankly the result was awful!

With a grimace he inclosed the proof to Dr. Jiggs.

* * * * * *

But, as afore said, Fate often comes to the rescue of the foolish and of the great. That particular month the Calivania Medical Journal was late in appearing, and the printer's devil was madly running hither and yon, fetching and carrying, while the important work of making up the page proof was in progress.

"Hey, you, Jake! Get a move on! Don't you know we're late now?"

And Jake, instigated by Fate, startled, dropped the galleys containing Dr. Jiggs' article. Fearful of punishment, Jake scooped up the resulting "pie" set it in apparent order and carried the galleys to the waiting stone.

* * * * * *

When the issue of the Calivania Journal containing his article, reached Dr. Jiggs he did not open it for several days. He dreaded to view his direful failure. He *must,* he just *must* get a secretary that could punctuate for him.

One day he was surprised to see in the mail a letter congratulating him on his wonderful article which had recently appeared in the Calivania Journal. The next day several more such letters arrived. Then Dr. Jiggs opened his copy. He turned listlessly to the article; glanced at it; looked again, then again, with unbelieving joy radiating from his countenance. Then, gathering the magazine into his arms Dr. Jiggs danced the dance of a howling dervish.

His wife looking in at the door, said, "For the land's sake! Are you clear crazy?"

Said Dr. Jiggs, "My reputation is saved, my sagacity vindicated! Fate has come to my rescue and pointed the way to perfect punctuation!"

M. S. B.

DEFECTIVE SPEECH

Much has been written relative to eyestrain and faulty hearing as causal factors in the backwardness of school children, and comparatively little attention has been given to the similar influence of defective speech. There is no physical act so closely related to the mind as that of articulate speech. It has been called by one the "tool" and by another the "mirror" of the mind, and the muscles involved have been called the mental muscles. For the normal development of speech, therefore, there must exist contemporaneously a normally developing mind. The first indication oftentimes of deranged mental process is a tardy or faulty development of speech. On the other hand, we are beginning to recognize the fact that as speech is largely the product of the mind, so the mind depends for normal activity and development upon perfect freedom of speech. As the workman cannot do the best work with poor tools, so the mind cannot functionate properly with a defective means of expression. Not only is it handicapped by the mere presence of friction in the machinery of speech, but the consciousness of difficulty, even though it be slight, will lead to a confusion of thoughts that is entirely incompatible with normal mental development.

It is in school that this latter factor often assumes enormous proportions. A child will bear almost anything better than the ridicule of its mates, and the dread of being made fun of on account of a defect of speech is an insurmountable obstacle to progress. Moreover, children with defective speech not only shrink within themselves, but suffer great mental anguish because they appear to themselves to be different from others and because they are unable to express their thoughts freely.

Not only are those having marked defects of speech the subject of neglect on the part of school boards and medical directors, but it may be said that all school children should have more attention given to their speech and voices. The moral and educational advantages of speech and vocal culture are very great, not to mention its esthetic value; and, as a preventive and remedial agent in all throat affections it seems to be almost entirely overlooked.

It is a fact that almost all school children have some defect of speech. Some are only a little worse than others. A higher standard of excellence should be required, first in the teacher who furnishes the example, and second in the pupils who are to be future teachers. The Board of Education of Philadelphia lately has authorized the training of twenty teachers, who will go into all the schools and have special classes for the children. Particular attention will be paid to lisping and stammering. F. C. H.

IS INFLUENZA CONQUERED?

Epidemic influenza has been recognized for centuries, history recording frequent outbreaks of more or less severity. The pandemic of 1918 was of unparalleled severity, with an appalling death rate from complicating pneumonia. With the horrors of that winter still fresh in mind any appearance of influenza is a cause for the greatest apprehension. The etiological factor has remained a mystery, despite extensive research, and this has added to the dread of the disease.

Recent publication by Olitsky and Gates of their work in the Rockefeller Institute for Medical Research is of real interest, in that they have apparently discovered an organism which, by reason of its cultural and experimental characteristics, gives ground for the hope that influenza will soon be conquered. Olitsky and Gates are creditably cautious in their claims, only presenting the results of their experiments. Although it is still too early to herald their discoveries as an absolute solution of the problem of influenza, yet so important are their experiments that a knowledge of the results is of the keenest interest to all physicians.

Using rabbits, Olitsky and Gates injected intratracheally nasopharyngeal washings from patients suffering with influenza. As a result, one or two days after the injection the rabbits showed signs of malaise, fever, conjunctivitis and a leukopenia. These signs lasted 2 to 4 days. The most important finding was that the lungs, taken at the height of the attack, showed the following: a marked exudation of fluid into the interalveolar walls, practically an edema, with very few cells; rupture of the interalveolar walls, causing emphysema; hemorrhages into the substance of the lung; and the bronchi and bronchioles frequently filled with serous fluids and showing necrosis and exfoliation of epithelium. Thus, in brief, the lung substance was severely injured in patches, but showed none of the fibrinous and cellular consolidation which characterizes the ordinary pneumonias. Bacteriological examination of these lungs failed to reveal any ordinary bacteria as constantly present. However, intratracheal injection of a saline suspension of such lung tissue caused the prompt development of the typical syndrome and this could be induced successively in series of rabbits. This proved to the investigators that they were dealing with a specific, living virus. Experiment showed it to be filtrable and capable of being cultivated under certain anaërobic conditions. In time, the investigators were able to identify these organisms as small, globoid bodies, somewhat oval, gram negative, staining rather poorly.

These bodies at first grew feebly, but as they were carried through successive generations they became better adapted to artificial cultivation and multiplied luxuriantly. Suspensions of these cultures were then used in animal experiments, in parallel with those being made with nasopharyngeal washings from influenza patients, and suspensions of lung tissue from infected rabbits. These experiments showed that the organisms produced identically the same clinical and pathological picture as the other materials. Moreover, these organisms were obtained free from the protein of the culture media, by use of collodion sacs, and they still showed the same typical effects. Olitsky and Gates have named this organism the *Bacterium pneumosintes*—a bacterium that injures the lungs.

Further studies were now carried out, using the protein-free suspension of the Bacterium pneumosintes. It was found that the repeated intravenous injection of live or killed cultures caused an immunity against Bacterium pneumosintes which could be demonstrated by agglutination, precipitation, complement fixation and phagocytic tests. It was then found that rabbits which had recovered from an infection produced by intratracheal injection of nasopharyngeal washings, or of bacterium pneumosintes, were immune against subsequent infection and their serum gave the immune reactions. This immunity began during convalescence (10 days) and persisted about five months. Finally it was found that the serum of human beings who had had influenza within five months gave the same immunological reactions with Bacterium pneumosintes, while human beings who gave no history of influenza did not exhibit any of these immune reactions; also, patients who had had influenza two or three years previously did not possess any evidence of specific immunity, showing that this immunity is only temporary. A study was then made of the possibility of immunizing human beings, using killed cultures of Bacterium pneumosintes. Volunteers were given three subcutaneous injections in a similar manner to that used with antityphoid vaccine. On the tenth or eleventh day after the final injection the blood serum of nine men examined contained specific agglutinins for Bacterium pneumosintes, thus indicating the formation of protective antibodies as a result of the injection of the vaccine. This latter test is of course not definite proof of protection. Only the injection of large numbers of individuals during an epidemic and carefully following them will indicate whether or not this vaccination will protect against influenza.

Thus, to sum up, Olitsky and Gates claim to have isolated and cultivated an organism from patients suffering with influenza which is capable of reproducing a similar condition in rabbits. During the height of the attack in rabbits there is a peculiar damage to the lung which makes it susceptible to secondary invasion with such organisms as streptococci, etc. This organism causes the development of specific antibodies in the serum of rabbits, and these same antibodies can be demonstrated in the serum of patients convalescent from influenza. These antibodies can be developed in rabbits by the subcutaneous injection of suspensions of killed Bacterium pneumosintes, and rabbits so injected are immune to subsequent infection with this organism, this protection lasting about five months. Finally, injection of human beings brings about the same evidence of immune bodies in the blood serum, but only time can tell if this will protect human beings against influneza.

These experiments have involved an enormous amount of careful work, and they are beautiful in the thorough, logical manner in which they have been carried out. Confirmation, both from other laboratories and from practical, clinical test must come before the final result can be accepted. Meantime, physicians cannot but be deeply interested and hopeful. If these experiments should finally give all that they seem to offer, then one more triumph is added to the achievements of the medical sciences with the conquering of influenza.

R. R. S.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

THE YOUNG DOCTOR; SELECTION OF A LOCATION AND TYPE OF PRACTICE

The far-sighted young man, even in advance of his graduation, might profitably give some thought to the location in which he will enter upon the practice of medicine. A resident service in a hospital must, of necessity, intervene between the completion of the medical course and actual entrance upon the practice of medicine on his own account. In some circumstances, there are definite advantages to be gained by entering a hospital in the community which the young medical man expects to make the field of his future endeavor. The opportunity to make both lay and professional friends, the possibility of later securing a junior appointment to the hospital, the assurance of a place in which a friendly reception will be accorded him and his patients, an intimate familiarity with the diseases of the region, a knowledge of the conditions governing the practice of medicine in that community, and perhaps, an opportunity to become associated with an established practitioner, are some of the advantages which result from such a selection, and may be of considerable value in aiding him in the first difficult years of his practice.

In an attempt intelligently to decide upon a location and the kind of medical work in which to engage, the young doctor inevitably must essay an appraisement of his own personal peculiarities, talents and qualities—an obviously difficult undertaking, since he has as yet had but little opportunity for self-expression, and an accurate inventory of personal qualities by the individual himself is obviously difficult. The counsel of one or two more experienced and, therefore, wiser medical friends may be helpful. Every man owes it to himself to utilize his talents to the best advantage, not only that he may further his own advancement, but also in order that he may be of the greatest service to his fellow man. In other words, he should market his wares to the best advantage. The coin which he seeks in payment will vary. Some will consider a financial return the great *desideratum;* while others will be amply repaid if they achieve a modest financial return, at least some scientific success, and the appreciation and esteem of those who are worth while in the community in which they serve.

There is no lack of opportunity for the young physician of to-day who is well-trained and who has ability, industry and ambition. It is a question rather of *the* opportunity than of *an* opportunity—the avoidance of endeavoring to fit a round peg in a square hole, or, if you prefer, of fitting himself into that niche which he is best qualified to fill and adorn. Communities, laboratories, industrial plants, medical schools, custodial institutions, various public services, established practitioners, all beckon to him and endeavor to attract him into their service. With these opportunities before him, the young medical man should be especially careful not to fall into the error of accepting a position which may gain him a temporary advantage at the sacrifice of his future.

Considerable importance must be attached to personal qualities and special talents. Good health and a robust constitution are requisites to success in the general practice of medicine and surgery. Some of the medical specialties make fewer physical demands. An engaging personality may be a great asset, or the lack of it a great handicap in one type of practice, but of much less consequence in another.

A young medical man presumably takes up a special line in medicine because of the possession of unusual talents which interest him in that particular study, and fit him for it especially well. Lacking in a requisite special aptitude, he cannot hope to achieve in a special field more than mediocre success. It may be that during the period of his resident service the possession of a special talent will have become evident. If so, it should be cultivated and opportunity sought for its exercise, although it may be years before circumstances will make possible the restriction of his activities to that thing which he has found he can do best. Indeed, it is desirable that he should gain a general experience before restricting himself to a narrow field, in order that he may have a proper sense of proportion, and a knowledge of the proper relation of special activities to the whole subject of medicine. But during years of general practice he may study and perfect himself in a special branch with the object ultimately of restricting his practice to it.

By reason of previous experience or interest, some will fit best into industrial medicine; others with executive ability may be attracted to institutional work or to Public Health work, the Army or the Navy. A few—and they are far too few—have the pedagogic instinct, and will enter upon teaching careers and research work in educational institutions.

A decision as to what line to follow is often difficult, but will be determined by inclination, opportunity, necessity, or special talent; and, having more or less definitely decided that character of work for which he seems best fitted, the community in which he shall undertake his labors becomes the next important consideration. Shall it be urban, suburban, or rural? The answer is to be found, in part, in the decision with regard to the foregoing, since the community selected should give proper opportunity for the exercise of his talents to the best advantage.

A location is often urged upon young physicians, the chief advantage of which is stated to be the fact that there is no other physician within a reasonable number of miles, and that if he locates there he will be certain quickly to gain a practice. In other words, without competition he is sure to succeed. The offer of such an opportunity is not very flattering to the young man or his training, but it may be there are those who will succeed in gaining a livelihood under no other circumstances. It may here be said that medicine is indebted to country doctors for some of its greatest contributions.

To-day the press of the general economic situation upon the young physician tends to drive him from the large cities to which he is predisposed by reason of his associations during his college and hospital days. The cost of equipment, high rents, and living expenses, often necessitate an outlay of two or three thousand dollars during the first year, and as his income is likely to fall far short of this, he must, in some way, be financed during this period. It requires much more capital than formerly to weather that period between the beginning of practice and arrival at a self-supporting basis. "Waiting for a practice" is rather expensive these days.

A suburban location presents fewer difficulties, often offers a greater certainty of early earning a fair income, and provides access to medical centers. Smaller cities often, too, offer splendid opportunities, not only in material return and scientific opportunity, but are places in which life is agreeable and personal contacts pleasant.

The young physician will be most likely to fit into the life of a community with which he finds himself in sympathy as regards race, religion, culture and ideals. If he has some familiarity with the chief industries of the section, it will also be an advantage. The selection of a location and the type of practice are both practical matters into the determination of which common sense is a *sine qua non*. My advice to the many young medical men who have consulted me has been that they should endeavor to select a community in which conditions of life are such as to insure a reasonable degree of contentment and happiness if possible among a people whose ideals and religion are similar to their own; to ascertain what particular talent, if any, they may have, and to develop such talent as necessity and opportunity may permit. Competition need not be feared, but on the contrary, acts as a stimulus to develop the best that lies within a man. Time is of the essence of success; talent, patience, industry and opportunity are indispensable adjuncts. Ross V. Patterson, M.D.

Philadelphia, Pa.

COMMUNICATION

TO THE MEDICAL PROFESSION ON

DIPHTHERIA WEEK

The Committee on Public Relations of the Medical Society of the State of Pennsylvania, coöperating with the State Department of Health, has designated a week in the month of April as the appropriate time to carry the message to every man, woman and child of understanding age concerning diphtheria.

Dr. Edward Martin, the chairman of the Committee, makes the following suggestions:

> Bearing on Diphtheria Week the State Society intends that the educational campaign shall be put over more comprehensively, effectively and intensively than has been any previous campaign bearing on public health. The State Department is working with full sympathy and their force is entirely available.
>
> The purpose is that every citizen in the state shall have carried to him and his family such knowledge on diphtheria as will enable them best to protect themselves against it, or if they have it of getting well without complications.
>
> Dr. Finegan has promised full coöperation in the schools. Every school should have a diptheria lesson given by the teachers, given in his or her own class, given as they give a lesson in mathematics, with the children examined afterwards to see if they know it, the examination either written or oral, and the children marked on it. This doesn't happen unless someone drives it. The proposition is too big for one man to drive alone, but it is entirely feasible for each district chairman to secure people who will drive it in the various localities, they in turn grouping with them intelligent, broad-minded citizens who will see that this thing goes through properly.
>
> Every church should have a sermon on diphtheria. The Bible is full of suitable texts and literature will be forwarded to any address. The newspapers should devote space to diphtheria, pushing the lesson home. Employers should put the brief facts, so far as prevention is concerned, in the pay envelopes. And, most important perhaps, the labor organizations, as well as other organizations, should be talked to and addressed on diphtheria by the members of our profession. Of course the radio is not to be despised, and of course you will have the complete and most efficient coöperation of the Catholic Church at once.

The medical profession has frequently been accused of not being sufficiently interested in public health matters, and this is an opportunity to belie the assertion. The Committee and the Department of Health appeal to every doctor in Pennsylvania, whether or not he be an officer or committeeman of his society, to assist in bringing this message to the people.

A sore throat may be one of the initial symptoms of diphtheria and should be treated as such. Toxin-antitoxin will prevent diphtheria, and immunization should be explained to the lay citizen. Our greatest offenders in prophylaxis are the foreign-born who do not understand. Carry the message especially to them. The Schick test should be as familiar to every practitioner of medicine as is vaccination for smallpox.

If your county has not held its county medical society and public meetings, be sure that such will be held. May this initial effort on the part of the profession prove a splendid success.

F. L. V. S.,
For the Committee on Public Relations.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

MEDICAL DEFENSE

Is there a member of our Society clever enough to avoid all the circumstances that may lead to institution of an alleged malpractice suit as the result of his best efforts? There are apparently about two thousand five hundred of our members indifferent to the menace of threatened suits. If history repeats itself, however, more than two thousand of these apparently indifferent members will take advantage of the time intervening between the date of this writing, March 22d, and March 31st, to pay their 1923 county medical society dues, and thus assure themselves for all time of adequate defense against such suits. After March 31st, the good and faithful county society secretary will take up his unappreciated task of restoring to good standing those members who have by their own carelessness deprived themselves of medical defense and other material benefits of membership in the Medical Society of the State of Pennsylvania.

On March 22, 1923, 75 per cent or more of the membership of the following component county medical societies have paid their dues for the current year and the same has been remitted to this office.

Montour,	100%	Schuylkill,	90%	Washington,	83%
Wyoming,	100%	Clinton,	88%	Cambria,	80%
Adams,	95%	Mifflin,	88%	Bucks,	79%
Carbon,	93%	Blair,	87%	Delaware,	78%
Lebanon,	92%	Clarion,	87%	Franklin,	76%
Elk,	91%	Clearfield,	86%	Union,	76%
Greene,	91%	Dauphin,	85%	Erie,	75%
Lycoming,	90%	Mercer,	84%	Sullivan,	75%
Montgomery,	90%	Huntingdon,	83%	Warren,	75%

ANTI-VACCINATIONISTS.

On March 20, 1923, there appeared before the Committee on Public Health and Sanitation of the House of Representatives in Harrisburg in support of House Bill No. 62 a group of conscientious objectors to vaccination against smallpox, consisting of three laymen and two graduates in homeopathy of about the year 1900.

Their first speaker was fortified only by a volume of the Ninth Edition of the Encyclopedia Brittannica, from which he read the opinions of one or two of England's many anti-vaccinationists. The next proponent of the bill, a physician, read to the committee letters from several mothers who attributed keloid or osteomyelitis or diabetes in their respective children to the "accursed virus." Another proponent, recognized as "appearing frequently on such hearings," glibly related some smallpox statistics from Germany and the Philippines. The other one of the physicians above mentioned stated that vaccination had doubtful value, but that modern methods of sanitation deserved most of the credit for the decreasing morbidity from smallpox. Listening to such twaddle occupied sixty minutes of the committee's time, and the proper refutation of such misinformation required the presence of several busy medical men from Washington, D. C., Philadelphia, Huntingdon and other points in Pennsylvania.

The case of the opponents to the bill was well prepared by the Chairman of the Pennsylvania Medical Legislative Conference, and the facts regarding vaccination against smallpox were most convincingly presented by Dr. McCoy, of the United States Public Health Service; Dr. Andrew A. Cairns, of the Department of Contagious Diseases of the City of Philadelphia; and Dr. Jay F. Schamberg, of the latter city.

That the truth will prevail and that the bill will be unfavorably reported upon we firmly believe. Nevertheless, by such silly stuff such bills as No. 62 are inspired biannually, and their exclusion from our statute books in the health interests of our people justifies the existence of the Medical Legislative Conference and your annual contribution to the support of the conference. Printing, postage and railroad travel require money.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to March 17th:

Adams: *New Member*—Ivy F. MacNair, Littlestown.

Allegheny: *New Members*—James E. Rush, American Society for Control of Cancer, 370 Seventh Ave., New York, N. Y.; J. Sanford Moyer, Mercy Hospital; James D. Howard, 679 Washington Road; Adolphus Koenig, Jr., Westinghouse Bldg.; Donald R. Kunkelman, 406 Washington Road, Pittsburgh. *Deaths*—Stewart N. Pool, of Pittsburgh (Univ. of Penna., '91), Feb. 19, aged 56; Charles A. Wishart, of Pittsburgh (Univ. of Penna., '75), March 11, aged 71.

Beaver: *New Members*—Evelyn S. H. McCauley, Beaver; Leedom Sharp, Hookstown. *Reinstated Member*—William H. Shields, Koppel.

Bucks: *New Member*—George S. Deibert, Sellersville.

Bradford: *Deaths*—Cyrus L. Stevens, of Athens, (Coll. of Phys. & Surg., Keokuk, Ia., '80), Feb. 19, aged 72; W. Frank Harshberger, of New Albany (Eclectic Med. Coll., Cincinnati, '81), recently, aged 70.

Cambria: *New Members*—Harold M. Griffiths, Johnstown Trust Bldg.; Francis M. B. Schramm, 276 Cooper Ave., Johnstown.

Carbon: *New Member*—Solomon L. Hermany, Bowmanstown.

Clearfield: *New Member*—Harry G. Shaffer, Grampian.

Dauphin: *New Member*—David E. Hoff, 212 Dauphin Bldg., Harrisburg.

Elk: *New Member*—Lewis L. Hobbs, Jr., Ridgway.

Fayette: *Removal*—Clyde W. Conn from Smithfield to R. F. D. No. 5, Uniontown.

Greene: *New Member*—George M. Scott, Waynesburg.

Jefferson: *New Members*—P. P. Horner, Conifer; Leo W. Zimmerman, Timblin.

Lawrence: *New Member*—Edgar M. Parlette, Johnson Bldg., New Castle.

Luzerne: *New Members*—J. Alan Corson, Parsons; Wilson C. Marsden, Plains; Angelo L. Luchi, Hazleton; Francis J. Conlon, Pittston; Rosanna N. McKinney, 548 Miners Bank Bldg.; John F. Edwards, Miners Bank Bldg.; Edward E. Marsh, 11 E. Hollenbeck Ave.; Edward L. McGinley, 11 So. Grant Ave., Wilkes-Barre.

Montour: *Resignation*—Joseph P. Shearer, Washington, D. C., formerly of Florence, S. C.

Philadelphia: *New Members*—Samuel A. Lowenberg, 1905 Spruce St.; Henry B. Schmookler, 1320 S. Fifth St.; Leon O. Davis, 4515 Paul St.; William J. MacMurtrie, 912 S. Forty-ninth St.; William Samueli, 530 Pine St.; Samuel Nicholas, 1532 S. Sixth St.; Clifford B. Farr, 4401 Market St.; G. Widener Knadler, 2034 W. Tioga St.; Frank D. Levy, 1859 N. Eighth St.; Elizabeth L. Martin, Friends Hospital, Frankford; Joseph B. Wolfe, 1314 S. Fifth St.; Edward H. Campbell, 314 Kent Road (Cynwyd); Russell C. Weimer, 8031 D St. (Fox Chase); Benjamin D. Parish, 1927 Spruce St.; Augustus F. Kempton, 2118 Pine St.; Charles Roland, 6387 Drexel Road; Leonidas Farmakis, 1123 Mt. Vernon St.; William F. Morrisson, 2044 Chestnut St.; Francis M. Schilling, 2014 Kinsey St. (Frankford); Rebecca C. Reiss, 918 N. Fifth St.; Theodore E. Orr, Widener Memorial School, Broad and Olney Aves.; R. Grant Barry, Philadelphia Hospital for Mental Diseases, Thirty-fourth and Pine Sts.; C. W. Nissler, 1034 S. Fifty-fourth St., Philadelphia. *Reinstated Member*—Henry W. Cattell, 3712 Irving St., Philadelphia. *Deaths*—Mary T. Miller, of Philadelphia (Women's Med. Coll., '99), recently; Louis H. Jacob, of Philadelphia (Med. Chirurg. Coll., Phila., '01), recently, aged 44.

Schuylkill: *New Members*—Walter G. Bowers, Schuylkill Haven; John W. Arbogast, Tower City; Raymond C. Dengler, Delano; William A. Burke, Albert P. Knight, William F. Leigh, Pottsville; John L. Flannigan, Silver Creek; Charles H. Knauer, Oliver K. Speer, Tamaqua; Irvin E. Sausser, Valley View; Francis M. Quinn, Minersville; James A. Longo, Shippton; Robert F. Mausser, Ashland; Willard G. Mengel, Coaldale.

Snyder: *New Member*—A. Jerome Herman, Middleburg.

Washington: *New Members*—James A. Schurgot, California; Dell D. Butler, Frederickstown.

Westmoreland: *New Members*—L. S. Strawn, A. W. King, West Newton. *Death*—Florence L. Marsh, of Mount Pleasant (Jeff. Med. Coll., '68), recently, aged 75.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since February 17th. Figures in first column indicate county society numbers; second column, State Society numbers:

Feb. 20	Cambria	54–65	3028–3039	$60.00
	Mercer	59–61	3040–3042	15.00
	Delaware	59	3043	5.00
	Mifflin	17	3044	5.00
	Dauphin	95–100	3045–3050	30.00
	Erie	69–78	3051–3060	50.00
	Lackawanna	62, 68, 70–78	3061–3071	55.00
Feb. 21	Lackawanna	79–84	3072–3077	30.00
	Clinton	14–16	3078–3080	15.00
	Delaware	60	3081	5.00
	Clearfield	31–38	3082–3089	40.00
Feb. 23	Berks	60–99	3090–3129	200.00
	Montgomery	127–134	3130–3137	40.00
Feb. 24	Venango	18–19	3138–3139	10.00
	Delaware	61–63	3140–3142	15.00
	Bedford	1–3	3143–3145	15.00
Feb. 26	Dauphin	101–106	3146–3151	30.00
	Mercer	62	3152	5.00
	Clinton	17–20	3153–3156	20.00
Feb. 27	Lackawanna	85–91	3157–3163	35.00
	Somerset	26	3164	5.00
	Allegheny	478–702	3165–3389	1,125.00
	Cambria	66–75	3390–3399	50.00
Feb. 28	Clinton	21–22	3400–3401	10.00
	Mifflin	18–19	3402–3403	10.00
Mar. 1	Bradford	16–22	3404–3410	35.00
	Delaware	64	3411	5.00
	Lycoming	77–87	3412–3422	55.00
	Luzerne	2–85	3423–3506	420.00
Mar. 2	Armstrong	27–40	3507–3520	70.00
	Northumberland	29–38	3521–3530	50.00
	Center	1–10	3531–3540	50.00
	Cambria	76–87	3541–3552	60.00
Mar. 3	Somerset	27–28	3553–3554	10.00
	Beaver	28–33	3555–3560	30.00
	Delaware	65–66	3561–3562	10.00
Mar. 7	Schuylkill	1–100	3563–3662	500.00
	Dauphin	107–113	3663–3669	35.00
	Venango	20	3670	5.00
	Lawrence	22–32	3671–3681	55.00
	Mifflin	20	3682	5.00
	Clearfield	39–50	3683–3694	60.00
	Center	11–14	3695–3698	20.00
	Juniata	7	3699	5.00
	Wayne	9–16	3700–3707	40.00
	Lackawanna	92–108	3708–3724	85.00
	Union	12–13	3725–3726	10.00
	Jefferson	1, 3–18	3727–3743	85.00
	Lycoming	88–94	3744–3750	35.00
	Warren	1–36	3751–3786	180.00
	Adams	20–23	3787–3790	20.00
	Delaware	67–68	3791–3792	10.00
	Mercer	63	3793	5.00
	Dauphin	114–125	3794–3805	60.00
	Clarion	25–27	3806–3808	15.00
	Northumberland	39–45	3809–3915	35.00
	Lackawanna	109–123	3816–3830	75.00

Mar. 12	Mifflin	21	3831	5.00
	Beaver	34–41	3832–3839	40.00
	Mercer	64	3840	5.00
	Cumberland	21–26	3841–3846	30.00
	Columbia	22–26	3847–3851	25.00
	Westmoreland	3–100	3852–3949	490.00
	Cambria	88–105	3950–3967	90.00
	Luzerne	86–111	3968–3993	130.00
	Philadelphia	1001–1250	3994–4243	1,250.00
Mar. 13	Bucks	41–60	4244–4263	100.00
	Lackawanna	124–128	4264–4268	25.00
	Center	15–16	4269–4270	10.00
	Elk	10–21	4271–4282	60.00
Mar. 14	Delaware	69	4283	5.00
	Greene	1–26	4284–4309	130.00
Mar. 15	Lackawanna	129–138	4310–4319	50.00
	Perry	1–3	4320–4322	15.00
	Perry	4–5	4323–4324	10.00
	Jefferson	19–34	4325–4340	80.00
	Delaware	70	4341	5.00
	Franklin	27–34	4342–4349	40.00
Mar. 16	Fayette	38–73, 76–81	4350–4391	210.00
	Susquehanna	1–10	4392–4401	50.00
	Center	17–18	4402–4403	10.00
	Lycoming	95–101	4404–4410	35.00
	McKean	19–24	4411–4416	30.00
	Clearfield	51–59	4417–4425	45.00
	Carbon	1–27	4426–4452	135.00
	Washington	68–102	4453–4487	175.00
Mar. 17	Perry	6–7	4488–4489	10.00
	Lebanon	1–11, 13–34	4490–4522	165.00
	Snyder	1–5	4523–4527	25.00
	Beaver	42–48	4528–4534	35.00

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary

230 State St., Harrisburg

WORKMEN'S COMPENSATION ACT

The amendment to the Workmen's Compensation Act of 1915, which has been referred to in these columns in a previous article, was presented to the House of Representatives Tuesday, March 20th, by Representative Herman Earley, of Harrisburg, and is known as House Bill No. 846. We quote this amendment in full as follows:

> "To amend paragraphs E and F of Section 306, also paragraph 7 of Section 307 of an act, approved the second day of June, Anno Domini one thousand nine hundred and fifteen (Pamphlet Laws, seven hundred and thirty-six), and amended the twenty-sixth day of June, Anno Domini one thousand nine hundred and nineteen, entitled "An act defining the liability of an employer to pay damages for injuries received by an employee in the course of employment; establishing an elective schedule of compensation; and providing procedure for the determination of liability and compensation thereunder," and providing when the same shall become effective.

Section 306. The following schedule of compensation is hereby established for injuries resulting in total disability:

(e) From the time the disability begins the employer shall furnish reasonable surgical and medical services, medicines and supplies when and as needed, unless the employee refuses to allow them to be furnished by the employer. Compensation for such medical and surgical services and supplies furnished to the employee shall be paid to the medical doctor or surgeon by the employer regardless of where such services are rendered, either at a hospital, home or elsewhere. Compensation for such medical and surgical services and supplies shall in no case exceed the prevailing charge in any community in which the services are rendered for like medical and surgical services and supplies to other individuals in like circumstances. If the employer shall, upon application made to him, refuse to furnish such services, medicines, and supplies, the employee may procure the same, and shall receive from the employer the reasonable cost thereof within the above limitations. If the employee refuses to accept the services furnished him by the employer, the employee shall be responsible for all medical and surgical services rendered him during the time of such refusal.

From the time the disability begins the employer shall furnish reasonable hospital care, nursing, medicines, dressings and supplies, when and as needed, unless the employee refuses to allow them to be furnished by the employer. Compensation to the hospital shall not include the services of a medical doctor or surgeon, but compensation for such services must be paid directly to any medical doctor or surgeon furnishing such medical and surgical services.

Resident internes serving in hospitals are denied the right to collect fees for services rendered injured employees under this Act.

Any medical doctor, surgeon, hospital or institution, treating an injured employee under the Workmen's Compensation Act, shall within one week after the beginning of such treatment furnish the employer or his insurance carrier a certificate stating that such medical, surgical or hospital service is being rendered.

If the employee shall refuse reasonable surgical, medical, and hospital services, medicines and supplies, tendered to him by his employer, he shall forfeit all right to compensation for any injury or any increase in his incapacity shown to have resulted from such refusal.

Any medical doctor, or surgeon, hospital or institution, incorporated or otherwise, shall be and have the right of party in interest in any proceedings had or begun under the provisions of this Act, and shall have the right originally to file a petition for compensation for any such services, medicines and supplies, furnished under the provisions thereof.

Wherever the conditions are such that the employer is unable to furnish medical and surgical services, medicines and supplies, hospital or institutional care, medicines and supplies, and the treatment, care, nursing and supplies be furnished in an emergency wherein the absence of the employer or the condition of the employee make it impossible for such employer to provide such services, medicines and supplies, or for the employee to procure them for himself, said services, treatment, care, medicines and supplies shall be paid for by the employer to the medical doctor or surgeon for such medical treatment and supplies, and to the hospital or other institution for such care, nursing and supplies at the usual rates in the community for such emergency service.

(f) Should the employee die as a result of the injury, the period during which compensation shall be payable to his dependents, under section three hundred and seven of this article, shall be reduced by the period during which compensation was paid to him in his lifetime, under this section of this article. No reduction shall be made for the amount which may have been paid for medical and surgical services and medicines, nor for the expenses of the last sickness and burial. Compensation for medical and surgical services, medicines and supplies, also hospital care, nursing, medicines and supplies shall be paid for as hereinbefore required under the act, irrespective of whether the employee dies within the ten-day period or not. Should the employee die from some other cause than injury, the liability for compensation shall cease.

Amend Section 307, paragraph 7, to read as follows: "Whether or not there be dependents as aforesaid, the reasonable expenses of the last sickness and burial, (without deduction of any amounts theretofore paid for compensation or for medical expenses), payable to the dependents, or, if there be no dependents, then to the personal representatives of the deceased."

We trust that every industrial surgeon in Pennsylvania will be interested in the passage of this amendment. If there is constructive criticism to be offered it must be done so at once, and the office of the Executive Secretary will be pleased to consider such communications.

There has been introduced into the Senate by Hon. Mr. Joyce Senate Bill No. 332, which contains an amendment to Section 306, paragraph (e). The amendment in this revision of the Workmen's Compensation Act does not change the status of the industrial physician, and it will be our purpose to offer as an amendment the changes which we note above.

CHIROPRACTIC BILL

Since the hearing of House Bill No. 36 no further action has been taken.

OSTEOPATHIC BILL

Senate Bill No. 242, introduced by Hon. Mr. Smith, of Dauphin County, if passed, would license all those who desire such license to practice major or operative surgery in the state of Pennsylvania upon payment of a fee of $25.00 and a possible perfunctory examination. A more thorough examination will be required of all new graduates. It hardly seems possible that such sweeping requests could be made of the Legislature as are found in this bill, and which was on third reading and final passage March 26th. We asked that it be recommitted for the purpose of making amendments thereto. The hearing was held April 3, 1923, and the decision of the Committee on Health and Sanitation of the Senate has not been reported at this writing.

ANTIVACCINATION BILL

On March 20th in the Committee on Health and Sanitation of the House a hearing was held to discuss the proposed amendment to the Vaccination Act. The medical profession was splendidly represented, and it seems hardly possible that the Committee will report this bill out, and if they do, we hope it will be with a negative recommendation.

NONMEDICAL TECHNICIAN BILL

A substitute has been offered for House Bill No. 348, known as the nonmedical laboratory technician bill. This was done after a conference with the pharmacists and chemists at a meeting of the Medical Legislative Conference in Philadelphia on March 16th. We hope that the profession interested in this subject will get back of the bill and influence their representatives and senators for its passage.

THE CAUSTIC ALKALI BILL

House Bill No. 395 has not been reported out of the Committee on Health and Sanitation, but we trust it soon will be and that it will secure passage in the House and Senate. Members are urged to favor the passage of this very necessary act.

NOTICE

CALL FOR VOLUNTEER PAPERS
PITTSBURGH SESSION

The Committee on Scientific Work, at its first meeting at Harrisburg, February 6, 1923, instructed that a call be issued for eleven volunteer papers for the Pittsburgh Session of the Medical Society of the State of Pennsylvania, October 2 to 4, 1923.

(1) The subject and a brief outline of all papers must be furnished the Committee before April 20, 1923.

(2) The time limit for the reading of each paper is ten minutes.

(3) An author wishing stereopticon or projectoscope for the illustration of his paper must ask for same when submitting title and outline of paper.

(4) Titles of papers are to be sent direct to section officers or the Chairman of the Committee on Scientific Work.

(5) The Committee reserves the right to decline any paper not deemed of sufficient merit for the sessions.

Thomas G. Simonton, M.D., *Chairman*,
5321 Fifth Ave., Pittsburgh, Pa.

COMMUNICATIONS

To the Editor of The Atlantic Medical Journal.

Dear Sir: I wish to inform you that the first section of the train to California to attend the American Medical Association in San Francisco has been filled.

We are now arranging for a second section and trust this also will be filled.

Applications should be sent to Mr. J. S. McAndrews, Tours Manager, Lifesy Tours, Inc., 1472 Broadway, New York City. Yours very truly,

Edward Livingston Hunt, Secretary.

CLOTHING FOR CALIFORNIA COMFORT

We are receiving a number of inquiries regarding the climate and character of clothing to be worn at the time of the meeting of the American Medical Association here the last week in June. At this time of the year it is likely that there will be a certain amount of wind, some fog, and the evenings will be quite chilly. Rain is not expected at this time of year, and the days will be pleasant and delightful.

Persons coming to the annual meeting should bring overcoats and evening wraps; furs are worn by San Francisco ladies in the evening at this time of year. In the southern part of the state and the central valleys the climate will be very much warmer, corresponding somewhat to the summer climate in the Eastern states. In the mountain districts and the mountain resorts the climate will more nearly approach that of San Franicsco. Persons who expect to travel much in this state will be more comfortable with the ordinary weights of underclothing and with overcoats and wraps to meet the varying climates in different parts of the state.

W. E. Musgrave,
Chairman, Local Committee of Arrangements.
—*Jour. A. M. A.*, March 17, 1923.

COUNTY MEDICAL SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Perry Clare Smith, M.D., Ambridge.
Bedford—N. A. Timmons, M.D.,Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.*
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydson Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.

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* Deceased.

Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Victor J. Gangewere, M.D., Allentown.
Luzerne—H. Irvin Evans, M.D., Ashley, Pa.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—William R. Levering, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—F. Gurney Reese, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—H. D. Washburn, M.D., Susquehanna.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

April, 1923

COUNTY SOCIETY REPORTS

DAUPHIN—FEBRUARY

The Dauphin County Medical Society had the good fortune to secure for its speaker for the February meeting Dr. A. W. Colcord, of Pittsburgh, surgeon to the Carnegie Steel Company.

Dr. Colcord prefaced his remarks with a most timely and important emphasis on the real scope and future of the general practitioner, decrying the existing tendency to refer immediately to specialists every condition outside the realm of internal medicine. In his opinion the general practitioner cannot be replaced and should be capable, if he is not, of intelligently making use of most of the many diagnostic and therapeutic procedures that ordinarily are relegated to the specialists. Dr. Colcord gave a list of, and presented for examination, the articles he carries in his diagnostic bag, showing the simplicity of their application, and urged the general practitioner to become proficient in their use and thus raise the standard of general practice to where it should be.

Speaking of burns, in the treatment of which Dr. Colcord has been especially interested, and on which he has written several valuable papers, he was emphatic in stressing the importance of asepsis over the many chemical and physical applications always in vogue, giving, however, the formula of his own special ointment, developed by him after experiments with most of the established preparations.

In an interesting discussion of the modern treatment of shock he pointed out the folly, physiological and clinical, of giving heart stimulants.

The treatment of sprains, fracture, hemorrhage, medical and surgical emergencies, gynecological, genito-urinary and obstetrical conditions as encountered by the general practitioner, was ably explained, and many valuable points in handling these cases outside a hospital were described. All of Dr. Colcord's remarks were graphically illustrated by actual demonstration of the instruments and medication used.

The unusual character of the address, as well as the vast store of practical information it contained, was made doubly interesting by the sincere and enthusiastic manner in which it was delivered. All of the members and guests present felt that it was one of the most profitable evenings they had spent at the Society.

W. Minster Kunkel, M.D., Reporter.

ERIE—MARCH

On March 6th Dr. A. A. Brill, of New York City, spoke to the Erie County Medical Society on "The Medical Aspect of Psychoanalysis." Dr. Brill is a distinguished disciple of Freud. He said in part that psychoanalysis is a purely medical subject and may be likened to microscopic examination of the mind. In mental conditions, study begins with abnormal conditions and leads to the study of normal conditions. When a patient is conscious of an organ or function that means that organ or function is abnormal.

The old hospital records of thirty-five or forty years ago show how crude was the knowledge of mental abnormalities. These patients were reported as excited, dull, stupid or demented and subsequent reports only varied the order of these four adjectives. Of course it must be understood at the beginning that psychoanalysis is applicable to functional mental cases only. In institutions for the insane about two-thirds of the cases are functional. When entities were recognized in mental diseases psychiatry was put on a sound basis. In those early days patients were given asafetida and valerian. The neurotics went from clinic to clinic. Often a physician who attended more than one clinic would meet the same patient he had treated the day before in another clinic. This was a sad commentary on the inefficacy of the treatment.

Freud, whose work on psychoanalysis was first published in 1908, was discouraged by the lack of results in his treatment of neurasthenic patients and left Vienna, going to Paris, where Charcot was using hypnotism in his clinic. Freud became Charcot's favorite pupil; but while he was impressed with the power of hypnotism there were patients who could not be hypnotized. He returned to Vienna and became interested in a case of which Dr. Breuer told him. The patient exhibited a case of hysteria treated for a long time by Dr. Breuer without success. She insisted on telling Dr. Breuer in great detail all about an old love affair and at last seemed to be improving under what the patient called the "talking cure." But it was so time-consuming, Dr. Breuer was glad to turn the case over to Dr. Freud. When Freud started he knew no more of sex matters than other people, but he felt he had to inform himself, as patients spoke so much of sex. The psychoanalysists have been censured for placing emphasis on sex. They answer that there are two major impulses which control mankind in general: First, hunger (self-preservation); second. sex (mating instinct, or propagation of the species).

In primitive times man was often in danger of annihilation in striving for food. Under our more advanced civilization, the hunger impulse has been well taken care of by society. Except under most unusual circumstances a man need not starve. But it was made more and more difficult for the sex impulse as society progressed. Legitimate sex life must be deferred at least ten years, often much longer. Nature had made no provision for such suspension of function. The psychoanalysists use sex in its broadest sense and say it is a normal biological impulse, that it is something which must be controlled and in order to be controlled must be understood; consequently it is worthy of serious study. The average person thinks of sex as something lewd and wholly objectionable. The disciples of Freud do not hold to the theory that the sex life begins at the adolescent period. Young children show it in their loves and hates; as they grow older they want love objects. All children at a certain age masturbate. Teachers and parents become excited about this. At puberty the child again becomes more nervous. Masturbation is practically universal. If patients worry about this, later it lays the foundation for a neurosis. Nervous breakdowns are due to mental conditions and never to physical. Neuroses are based on repressions due to struggle between primitivity and civilization. Civilization is based largely on renunciation. If a child is brought up properly, with a proper understanding of sex matters and the reasons for inhibition, he will have no neurosis.

Freud developed certain parts of psychology, such as dreams. He made a study of dreams because patients spoke so much of their dreams. His conclusions were that dreams have a definite function, to relieve nervous tension at night. For instance, a starving person dreams of feasts and festivals of feasting. Everything has a reason. Life is a problem of the conscious and the unconscious. The conscious is only an organ of perception. Everything you do to-day is determined by your past. A human being is only a machine, it can only do certain things well. The unconscious is the primitive impulses. Education is repression of primitivity. Anna M. Schrade, M.D., Reporter.

LUZERNE—FEBRUARY-MARCH

The regular meeting of the Society was held in the Society Rooms on Wednesday evening, February 7, 1923, at 8:30 p.m. It was unanimously decided to give a testimonial dinner in honor of Dr. Charles H. Miner, who was recently appointed by Governor Pinchot as State Commissioner of Health. The dinner committee appointed were Dr. S. P. Mengel, Dr. H. L. Whitney and Dr. E. L. Meyers. The doctors also decided to conduct an extensive postgraduate medical group, and invitations to join this group will be sent to all members. Dr. Malcom Guthrie read an interesting report on public health in this community, giving a striking comparison between conditions in the year 1922 and those in 1921.

Dr. L. L. Rogers gave an exceptionally good illustrated lecture on "Infection of the Accessory Sinuses," which created considerable comment.

The meeting of March 7th was held in the Society Rooms at 8:30 p.m. Regular routine business was transacted, with reports of committees. Applications for membership were received from Dr. Francis B. Eveland, of Wilkes-Barre, and from Dr. Martin L. Connors, of Pittston. Dr. Rogers and Dr. O'Brien, of the United States Public Health Service, were visitors at the meeting.

Dr. R. R. Janjigian, Pathologist of the Wilkes-Barre City Hospital, read a paper before the Society "Urging Postmortems." Dr. Janjigian told physicians they are needed to further the cause of medical science. He also stated that the great medical discoveries of the past have been made through the clinical examination of patients before death and a postmortem after death. The discussion, which was keen, was taken up by the following doctors: John T. Howell, M. B. Ahlborn and Charles Long. The discussion was closed by Dr. Janjigian. H. Irvin Evans, M.D., Reporter.

PHILADELPHIA

Joint Meeting With Philadelphia Pediatric Society

February 14th

A joint meeting of the Philadelphia County Medical Society and the Philadelphia Pediatric Society was held Wednesday evening, February 14th, in the Hall of the College of Physicians, the subject for the evening being "Commonly Unrecognized Conditions in Infancy," Dr. Riesman presiding.

Dr. Philip A. Sheaff, the first speaker, demonstrated his pocket sphygmomanometer, which is described in the *Journal of the A. M. A.* for July 22, 1922. The disadvantages of the larger mercury instruments lie in the fact that they are too cumbersome and not readily carried about, while others are reduced in size at the expense of the scale. Dr. Sheaff's instrument is less cumbersome, is very compact when closed, and has no projecting portion, so that it is easily carried about. It has a scale graduated from 0 to 300 mm. of mercury, which has been compared to a standard, and also boasts a fine adjustment. It will give dependable service if well taken care of and not turned upside down, for instance.

In answer to a question, Dr. Sheaff stated that as yet no price had been set on the instrument, that this, which he had made himself, was the only one in existence.

Dr. Seth A. Brumm discussed "Otitis in Infancy," introducing his paper by saying that it was the aim of all pediatrists and otologists to prevent middle ear infection in children, or to restore the individual to the normal state with as little change as possible. He took up otitis media: 1, in children; 2, as a complication or sequela in acute infections; and 3, in systemic diseases.

In children the infection is second in frequency of occurrence to diseases of the respiratory and gastro-intestinal tracts. Every physician should accustom himself to examining the ear and be able to identify what he sees. Infants do not localize pain well, and often a diagnosis must be made on the presence of a bulging drum alone. There will be an elevation of temperature, sometimes tenderness in front of the ear, and rolling of the head from side to side. The infrequency of mastoid complications justifies the otologist in waiting to incise a bulging drum until there is a definite increase in tenderness on the tragus and over the tip of the mastoid, with a high temperature. Pyelitis, typhoid and pneumonia must be excluded in a differential diagnosis, even with a running ear.

In the exanthemata there is the greatest rapidity of tissue destruction if the middle ear becomes involved, with a tendency toward chronic suppuration. The acute stage is rarely seen by the otologist. Acute suppurative otitis media occurs most commonly in scarlet fever, while the simple catarrhal form also occurs, involving the bony structures. In measles we find both the suppurative and catarrhal types, with a more frequent mastoid complication. Middle ear infection may complicate diphtheria, arthritis, pneumonia or adenitis.

Because of its anatomy and blood and lymph supply, the middle ear can become a focus of infection and cause nephritis, neuritis, tenosynovitis, endocarditis, etc. In closing, Dr. Sheaff recommended to every practitioner that: 1, the otoscope and speculum are necessary for diagnosis; 2, the middle ear is a source of infection in children; and 3, there is no more contra-indication to the use of vaccines in children than in adults.

In discussing the paper Dr. Babbitt spoke of the complexity of etiology, the embryonic continuation of tissue, mechanical irritation by cough, destructive agencies, and errors in the care of the child.

Dr. A. Graeme Mitchell read a paper on "Pyelitis in Infancy." In brief, he said that pyelitis was one of the most common causes of fever in infancy, and the least likely to show symptoms for localization, the only disturbance being that of micturition, which is mild and easily overlooked. It occurs more frequently in girls than in boys, and the age of incidence is under two years. Infection may be by the hematogenous route or may ascend the ureters. There is an irregular, septic fever of 103 to 107 degrees, with vomiting or convulsions at the onset. Pain on urination is due to an associated cystitis. The stools are green and lumpy, containing mucus, so that attention is called to the gastro-intestinal tract. The outstanding feature is a fever without a discoverable cause. Pus in larger or smaller amounts will be found in the urine. It is a good plan to estimate the amount of pus by counting the cells as you would W. B. C.'s.

To treat, give 15 grains of potassium citrate with 15 grains of sodium bicarbonate four or five times in twenty-four hours to turn the urine alkaline. If that is not a success, give benzoic acid to make the urine acid, and then administer hexamine four or five times a day. Since the organisms became accustomed to one medium, it is well to alternate the alkaline with the hexamine treatment. Infection may be from the colon bacillus or the streptococcus. Administer fluids in large amounts, intraperitoneally if the child is dehydrated. The alkaline treatment should be continued after the urine is free from pus to prevent a recurrent attack. Whenever a child has fever, the urine should be examined, says Dr. Mitchell.

In the discussion that followed, Dr. Bradley spoke of malaria as a differential diagnosis, and mentioned the accompanying anemia which should be treated. He advised the use of bromocresol purple to replace litmus as an indicator, for a more delicate test.

The general opinion was against cystoscopic treatment, but one physician cited a case which was improved after one washing of the pelvis.

Dr. Franz M. Groedel, of Bad Nauheim, Germany, talked by invitation on "Movements of the Heart," with demonstration by moving pictures. He showed pictures of the apparatus he has constructed for the taking of moving pictures of the heart. A film ribbon 24 cm. wide and 20 m. long, sensitive to the x-ray on both sides, is placed between two intensifying screens. The whole is enclosed in metal, with a small window, allowing the x-rays to enter. Pictures are taken at the rate of sixteen per minute. They show three movements: peristalsis along the border of the shadow, the pumping, and the pendulum movements. The pictures are used to demonstrate the heart movements to students, and they enable one to look on each phase and part at the same time. Electrocardiogram pictures are taken at the same time. The contraction and excitation of the heart are so connected that they cannot be distinguished.

Dr. Jenks, President of the Pediatric Society, now took the chair.

The next paper was by Dr. J. Claxton Gittings, on "Scurvy in Infancy." He gave a short history of the disease and its etiology, reviewing the characteristics of the antiscorbutic vitamine. Scurvy takes from three to six months to develop, so that it is most often seen in artificially-fed babies of six months to a year old. In an acute case, handling the child is very painful, the thighs are tender to the touch, there is extravasation under the periosteum, the gums are red, the temperature is moderately elevated, pulse and respirations are rapid, and there is a secondary anemia. Subacute or latent cases are more difficult to diagnose. The weight may be stationary or increasing very slowly, the child is irritable, anemic, and has no appetite. The condition of the gums and the tenderness of the legs varies from day to day. The presence of R. B. C.'s in the urine is important. The most important differential diagnosis is that of osteomyelitis, a condition which cannot wait for treatment. The history will help in that case. Scurvy will also simulate simple purpura, poliomyelitis, enterocolitis, osteosarcoma, acute nephritis, etc. The x-ray will help in diagnosis, showing a shadow where the periosteum is lifted up, and a thickening along the epiphyseal-hypophyseal juncture. The treatment is two to four ounces of orange juice, lemon juice, or four to eight ounces of strained tomato juice. Prophylaxis includes the routine use of orange juice when food has been heated, beginning as early as one month. In conclusion, Dr. Gittings urged that physicians never forget antiscorbutic treatment, never overlook the diagnosis of scurvy, especially when there is any hemorrhage or extravasation under the skin, or any non-suppurative infiltration or swelling.

In the discussion, it was suggested that correction of nutrition of the child from the bottom up be added to the treatment.

The last paper was by Dr. Warren B. Davis on "Sinusitis in Infancy." He showed pictures to illustrate the anatomy and the development of the various sinuses, and gave as causes for infection cold, retention of secretion in the nasal passages, foreign bodies and deflections. There may be a chronic cough, epistaxis, pain in the distribution of the fifth nerve, watery or purulent discharge from the nares, congested turbinals, and enlarged tonsils and adenoids. The infection is usually mixed. Treatment is conservative, and consists of the application of argyrol, establishing drainage and the use of autogenous or mixed stock vaccines. The tendency is toward recovery without operation, 1, because the age precludes long chronicity; 2, polypi and spurs are not so common; and 3, there is better ventilation than in adults. In chronic cases operations are done to establish drainage with the least possible destruction of tissue.

In the discussion, the importance of remembering the unerupted second teeth in maxillary sinus treatment was emphasized.

February 28th

Subject: The Nursing Problem in Philadelphia. Dr. Riesman, Chairman, presiding.

Dr. Riesman opened the meeting by stating the problem, and questioning how it was to be met. He then called upon Dr. A. E. Blackburn as the first speaker.

At the outset Dr. Blackburn stated his position. He presented facts as a member of the Registration Board for Nurses, but his opinions were personal, and not the individual or combined opinions of that Board.

The great progress during the last twenty years in the working, living and educational conditions of nurses concerns two groups, the advanced group with the university degree idea, wishing to advance preliminary requirements and theoretical training; and the small institutions with no endowment and greater overhead expenses than income, protesting against the present requirements. For financial reasons it is necessary to have training schools, while nurses are not eligible for Red Cross work without at least the minimum training. The State Board, an advisory, not a mandatory, agent, has compiled lists of accredited schools, which show an increase in the number of training schools as well as in the number of nurses graduating yearly, and yet there is a scarcity of nurses available for private duty. The opening avenues in Red Cross work, welfare, industrial hygiene, health departments, positions as executives, teachers, head nurses, etc., are more inviting, with better remuneration and shorter hours.

The Society appointed a committee to investigate conditions but no report was made. The State Medical Society also appointed a committee, and received a fair proportion of replies to queries sent out through the state. These were correlated, and general deductions made. The resulting suggestion of the Board to undertake revision of curriculi met with much criticism. The Rockefeller Foundation reports that "Conditions are inadequate for the high grade of nurse needed," and "The safety of the patient and the responsibility of the medical and nursing professions demand high educational standards."

The well-to-do and the very poor are provided for, but the burden of the problem falls on those of limited means. The speaker believes that a well-trained nurse deserves all that she earns, but a good proportion of the sick can be cared for by one less well trained. The law requires only two years of training. Was the third year added for the advantage of theoretical and practical training, or because it was a useful asset to the hospital? Dr. Blackburn suggests that training schools for well educated nurses give serious consideration to pupils less well equipped, and that both classes of schools consider the training of "attendants." Every nurse should be registered yearly and definite fees should be established for the various grades of nurses.

Miss Clayton, head of the Philadelphia General Hospital Training School for Nurses, spoke from the nurses' standpoint.

The problem, which is both national and local, and which cannot be solved except by all those interested, has its foundation in economics, evolution and religion. Revision of standards and curriculum is a step upward, and high standards are not the cause of the shortage of nurses. Nursing is now a profession. Comparatively few nurses become mercenary, and not more so than doctors. The conduct of a few should not prejudice one against an entire group. The present is a transition period. Fewer doctors are being graduated yearly, so that medical service is as unavailable as nursing care. As the private practice of medicine is being supplanted by the group, so private nursing is giving way to the group, and nurses are invading the doctors' field. The direction of progress is toward preventive medicine. The outlook is encouraging for higher standards of ethical professions. The speaker supplemented Dr. Blackburn's two-year training with a preliminary school term of four months, so that theoretical class work would not interfere with practical duties, while the pupil would be more intelligent for further study in the class and wards. For the highly specialized, she recommended three years in college preceding the practical training of two years in the hospital, the college courses to include those qualified to equip the student to meet people and their problems intelligently. Another class, which has to do with the mechanical part of nursing should be limited. It is directly concerned with the training of the better class of domestics.

Dr. George M. Piersol took up the problem from the point of view of the physician.

Alleviation of human suffering is a bond of interest between physicians and nurses and there should be team-work and coöperation, with mutual respect. Their functions supplement each other, but are not identical. The following criticisms of private duty nurses have been made: They are not obtainable, they are discriminating in the type of cases they will take, they are lacking in the necessary fine attributes, and charge exorbitant prices regardless of their efficiency. A greater number of patients are demanding nurses, while relatively fewer are willing to enter the field of private duty nursing, largely because of the demand in other activities, where they can do good to a greater number than if restricted to a few. This is the outcome of the expansion of welfare and public health work. Specialized nurses are valuable and necessary in some cases, but it is an inconvenience to the physician and a hardship to the patient when nurses are not willing to take on certain cases in various surroundings, seeming to think first of their own comfort and convenience. Some nurses are not lacking in skill, but in tact and in consideration of the feelings of others, failing to grasp their problems. One reason for this fact is that younger girls are entering the profession, before their characters have been molded by home life and they have attained a certain poise and a proper perspective of life. Formerly they were actuated by the spirit of altruism, while now they merely compare the opportunities of the training school with other pursuits. This does not apply only to nurses. Physicians do not begrudge nurses proper financial return, but it seems that the salary should be related to the kind of service rendered.

Better nurses are not obtained by lowering the standards, and better preliminary education should be insisted upon. A practical nurse is useful among the poorer classes, but they are already taken care of by public health and hospital facilities. The solution seems to lie in the public health movement, one nurse to several patients, so that only the rich could afford a full-time nurse. Nurses should be trained physically, mentally, morally and temperamentally, and training schools should be educational units, well equipped and well endowed.

Dr. Richard C. Norris, in speaking "From the Surgeon's Standpoint," emphasized points already made—the demands of the middle class, the influence of the spirit of the times, the economic problem, and the question of supply and demand. People do not want to work twelve hours, but a doctor cannot stop at eight hours. Why should the inefficient receive the same salary as the efficient? The Florence Nightingale spirit seems to have disappeared, giving way to selfishness and commercialism. The work and sacrifices involved, together with the high standards, keep many women from the profession. The curriculum should be revised by an understanding group, not left to the nurses themselves. Nurses are well trained in theory now, but lack practical knowledge. Why should not their lectures be given by practically trained nurses, rather than by physicians? Formerly two years' training was considered sufficient. Why not have postgraduate courses for instruction in special types of work? There is too much of the idea of labor unionism among the nurses. Personality makes successful nurses. More girls might be induced to enter the profession if they were to be trained in a practical nursing knowledge. They must be imbued with a spirit of service, not with a knowledge of medicine.

The discussion was opened by Dr. F. Hurst Maier, chairman of the committee appointed to study the problem.

Three years ago Dr. Piersol appointed a committee to investigate the causes for the falling off of applicants, and the following were suggested: 1, the long hours, hard work, and strict régime, which are largely corrected now; 2, the age limit and educational requirements; 3, the imposing array of curriculum hours. It was suggested to cut down the curriculum one half, the last year to be spent in practical bedside work, with elective lectures in special lines. High school girls might be stimulated to enter the profession if the Department of Education would introduce a six months' elective course on nursing into the last year in high school. This course would comprise the lectures of the first year in training school, for which the girls would receive credit, and be followed by two years' training. Registered nurses would teach the course. A committee should be formed to bring about the fixation of definite requirement.

Dr. Hunter, a member of the delegation from the New Jersey State Medical Society, was asked by the President to say a few words. Dr. Hunter came with the committee representing the Standardization of Hospitals, with the same question before them—the dearth of private nurses. The question is one of supply and demand, and the problem must be solved upon an economic basis.

Dr. Alice W. Tallant continued the discussion. In Dr. Tallant's experience, nurses' classes interfere with their practical bedside work, so that there is a lack of unity in their work. Is it not possible to have more class work in the first year? One reason for the private nurse question is that they are trained in hospitals and not in private homes. In the same way medical students become interested in patients only as interesting cases. It is necessary to make simple cases and home nursing interesting. Some training schools send out nurses with the visiting nurses, which seems to be a good plan. Nurses need to learn how to notice whether or not a patient is comfortable, and to think of them as individual persons who need care. Dr. Tallant agrees with Dr. Norris that there is too much teaching of nurses by physicians rather than by nurses.

Because of illness, Miss Katherine Tucker was unable to be present to take part in the discussion.

Dr. G. Harlan Wells: There should be two types of nurse, the high-grade nurse with a good preliminary education, interested in public health work, etc., who needs technical and highly specialized training; and an ordinary, mechanical individual with a preliminary course of three months and one year of hospital training. As for salaries—no one can dictate what they should charge. Dr. Wells said he had no criticism to make of nurses as a body.

Dr. Thomas A. Branson: Dr. Branson spoke of the present day trend toward desire for entertainment and the commercialism which is creeping into the medical as well as the nursing professions. We need the nurse of twenty years ago, who was imbued with actual bedside experience and a large store of common sense, and we need a moderately trained nurse to supplement the trained one. Nurses now tend to be too scientific to make the patient comfortable. Let us have "less science and more art, less commercialism and more heart, a greater vision, and a profound element of common sense."

Dr. W. Blair Stewart, one of the visiting committee from New Jersey: The same nursing problem is before the committee. The hospitals and training schools in New Jersey have been visited in person, to find the good and bad points in each, and to attempt to get close to the nurse. Some conferences have been held, and in ten days another conference is to be held with the nurses organization, two representatives from each hospital in New Jersey to meet with the committee. In the opinion of the committee, too much attention is paid to the amount of money. There is too much registration for certain cases to the exclusion of other lines, and a marked shortage of nurses when they are most needed. The younger nurses are more technically trained, but are not as practical as those who also have the advantage of years. The older nurses do not stand in with the trade union methods.

President of the Philadelphia Hospital Association: The various angles and different viewpoints presented make the sum total confusing as to conclusions. All nurses are not mercenary because a few are, any more than all doctors are drug peddlers, and the class should not be judged by the few. Cutting down the course would not flood hospitals with nurses.

Dr. Freeley spoke for the individual nurse. The Directory for Nurses has been fairly successful in trying to serve the public, physicians and nurses. There is a large demand for attending nurses especially, and more nurses without the high standard of education seem to be needed.

General discussion: Just as retrenchment of the laws for medical education is being agitated, so it seems that training schools will have to retrench along certain lines to bring the problem back to normalcy. A scathing editorial was read which described the nurse as a "superlatively unpleasant person to have about, ignorant, coarse, and ill-mannered. A servant girl can take temperature and pulse and at the same time be agreeable and obedient."

Miss Frost, of the Visiting Nurse Society: All admit the scarcity of nurses. Young girls to be trained as nurses are not so hopeless as has been intimated, and they are the only supply to draw upon. The spirit of service is not entirely dead. In fact, a great deal of it can be found among the leaders of the profession. More extensive use might be made of the visiting nurse for hourly service. Nurses object to cases with few requirements. Relief for the nurse on twenty-four hour duty might be managed in that way.

Miss Clayton: The Rockefeller committee has made a study of the condition of nurses in hospitals and private homes, the report of which is being sold by the Macmillan Company. Every doctor, nurse and educator is urged to read the report, in order to find the cause for the trouble and its solution.

Dr. Roberts objected to the editorial which had been read, as being a misrepresentation of the nursing profession as a whole. Nursing is only an occasional occupation, which does not last throughout the year, and therefore nurses should be paid correspondingly high salaries. Why should not a nurse receive thirty dollars a week if a surgeon can get a thousand dollars for an operation? However, nurses should not change their prices over night.

At the close of the meeting, a motion was made and carried that a committee representing physicians, nurses and laymen, be appointed to investigate further the nursing problem, and that the committee submit a report not later than the last meeting in April.

ANNA RUTH WINTER, Reporter.

STATE NEWS ITEMS

DEATHS

DR. OLIVER H. FISHER, of Reading, aged 76 years, died on February 4th. He was graduated from the University of Pennsylvania School of Medicine in 1872.

DR. HOWARD LUTHER DIEHL, of Gettysburg, who was graduated from Hahnemann Medical College of Philadelphia in 1876, died on February 2d from pneumonia, aged 64 years.

DR. EZRA GRUMBINE, of Lebanon, aged 77 years, died on February 16th. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1868.

DR. C. W. WEBB, of Wellsboro, died on February 5th. Dr. Webb was born in 1855 and was graduated from the College of Physicians and Surgeons, Baltimore, Md., in 1879. He was County Medical Director of Tioga County.

DR. STEWART NEWELL POOL, of Pittsburgh, who was born in Delaware in 1867, and was graduated from the University of Pennsylvania School of Medicine in 1891, died of pneumonia on February 19th at his home.

DR. WALTER DE LA MONTANYE HILL, of Everett, died on February 9th at the Allegheny Hospital, Cumberland, Md., from pneumonia. Dr. Hill was born in 1877 and was graduated from Jefferson Medical College of Philadelphia in 1900.

DR. R. N. GREENFIELD, of Penn Line, died of heart disease on March 11th. He was aged 83 years and was a graduate of the University of Michigan Medical School, Ann Arbor, Mich., in 1869. He was a practitioner for more than 50 years before retiring.

DR. D. EDGAR HUTCHISON, of East Downingtown, recently passed away, aged 41 years. Dr. Hutchison was a graduate of the Medico-Chirurgical College of Philadelphia, class of 1905. He spent the past winter in Florida in an effort to regain his health, but failed to improve and lived only a short time after his return home.

DR. STEPHAN A. HUNTER, of Pittsburgh, aged 71 years, died on February 20th. He was graduated from Jefferson Medical College of Philadelphia in 1878, was ordained to the Presbyterian ministry in 1877, and served as a missionary in China from 1879 until 1891. He was also author of several books written in Chinese.

DR. CHARLES AMMON WISHART, died on March 4th at his home in Pittsburgh after an illness of several weeks. He was born in Washington in 1852, the eldest son of Dr. and Mrs. J. Wilson Wishart. After his graduation from the University of Pennsylvania School of Medicine, Philadelphia, in 1875, he entered the Western Pennsylvania Hospital as resident physician. Since 1878 he had been practicing in Pittsburgh, first as a general practitioner and later as an eye specialist. He was the founder of the Eye and Ear Hospital, now the Eye and Ear Dispensary of the University of Pittsburgh.

BIRTHS

BORN TO DR. AND MRS. L. M. KNAUBER, of Williamsport, February 22, 1923, a son.

DR. AND MRS. JOHN L. GOOD, of Harrisburg, have announced the birth of a daughter, Margaret Lynn Good, March 4, 1923.

DR. AND MRS. WILLIAM W. FARR, of Germantown, are being congratulated upon the birth of a son, William Wilberforce Farr, Jr., March 10, 1923.

MARRIAGES

DR. LEO W. ZIMMERMAN, of Timblin, and Miss Katherine Zapp, of Louisville, Kentucky, were united in marriage on January 31st.

ANNOUNCEMENT has been made of the marriage of Dr. Roy Deck and Miss Mabel Rice, both of Lancaster, on February 6th, at Oak Lane.

ITEMS

THE ENGAGEMENT of Miss Emma Haag to Dr. L. W. Frederick, of Reading, was recently announced.

DR. AND MRS. W. B. HENDERSON, of Philipsburg, recently sailed for South America on the American College of Surgeons' cruise.

DR. HOWARD S. REESER, of Reading, recently sustained a fractured femur while attending to his practice, from which he is recovering very nicely.

DRS. JOHN A. KLUMP AND ELLA N. RITTER, of Williamsport, are touring with the American College of Surgeons, visiting clinics throughout South America.

THE TRAIN for the special 25-day tour from New York City to the meeting of the American Medical Association in San Francisco, gotten up under the auspices of the Medical Society of the State of New

York, is already filled. Another train will be arranged for if 125 more subscribers can be secured. In order to do this, however, it will be necessary for applications to be in not later than the 15th of April. All applications should be sent direct to Mr. J. S. McAndrew, Tour Manager, Lifsey Tours, Inc., 1472 Broadway, New York, N. Y.

The Westmoreland County Medical Society has issued invitations to a Surgical and Medical Clinic to be held at the Westmoreland Hospital in Greensburg, on Friday, April 20, 1923, at 1 p. m. The Medical Clinic will be in charge of Dr. Thomas McCrea, Professor of Medicine of the Jefferson Medical College and Hospital; and the Surgical Clinic will be in charge of Dr. Wayne Babcock, of Philadelphia. Following the clinics a banquet will be held in the Penn Albert Hotel. Dr. William Davidson, Superintendent of Pittsburgh public schools, will be one of the after-dinner speakers at the banquet.

GENERAL NEWS ITEMS

A Preliminary Program has been issued for the Thirty-fifth Annual Meeting of the American Pediatric Society, which will be held at the French Lick Springs Hotel, French Lick, Indiana, May 31st, June 1 and 2, 1923.

The National Board of Medical Examiners announces the following dates for its next examination:

Part I, June 25, 26, 27, 1923.
Part II, June 28, 29, 1923.
Part I, Sept. 24, 25, 26, 1923.
Part II, Sept. 27, 28, 1923.

All applications for these examinations must be made on or before May 15th. Further information may be obtained from the secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pa.

Dr. Hubert Work was lately appointed secretary of the Interior by President Harding, to succeed Mr. Fall. He had previously held the post of postmaster general. Dr. Work was a practicing physician for twenty-five years in Pueblo, Colo. When the United States entered the war he retired from the active practice of medicine and volunteered in the medical corps of the army. After a number of promotions he reached the rank of colonel in the medical corps. Dr. Work went into the government service as an assistant postmaster general under Hays. When Mr. Hays retired from the Cabinet, Dr. Work was advanced to the postmaster generalship.

By Authority of the Director of the U. S. Veteran's Bureau a preliminary course in pulmonary tuberculosis has been given in twenty Veterans' Bureau Hospitals. This course is for the instruction of physicians in the Bureau service. Those who have completed the course are eligible to attend the postgraduate course now being given and to be repeated at intervals, at Veterans' Hospital, No. 41, New Haven, Conn., and at Fitzsimons General Hospital, Denver, Colorado. These latter schools began March 1st and 5th respectively. The chief instructor of the New Haven School is Dr. Nathan Barlow, of the Public Health Service. The Denver School is in charge of Major E. H. Bruns, M.C., U. S. A., chief of the Medical Service. While these courses are intended primarily for personnel now in the service of the Bureau, it is hoped that later courses will be open to those who wish to take up this specialty and enter the service of the Bureau. The course is most thorough and will last at least two months in each school.

The general supervision of both the Preliminary and the Postgraduate courses is in charge of the Clinical Director of Tuberculosis in the Central Office of the Bureau, Washington, D. C. The desire of the director is that the ex-service beneficiaries of the Bureau suffering from pulmonary tuberculosis may receive the best and most scientific treatment.

UNITED STATES CIVIL SERVICE EXAMINATION

Salaries

Grade A	Up to $3,250 a year
Grade B	Dp to $4,250 a year
Grade C	Up to $5,500 a year

Service

Veterans' Bureau.—For filling positions of physicitn, acting assistant surgeon, medical examiner, and medical referee, for full-time duty at the above salaries; and for part-time duty as physician, medical examiner, attending specialist and consultant, at a salary to be determined by the services rendered.

Public Health Service.—For filling positions of acting assistant surgeon at $480 a year for part time to $2,400 and $3,600 a year for full time.

The United States Civil Commission announces an open competitive examination on April 5, 1923, for physicians. There are 94 vacancies in the above services in Pennsylvania.

Range in Salary.—The entrance salary within the range stated will depend upon the qualifications of the appointee as shown in the examination and the duty to which assigned.

Bonus.—Appointees to the Public Health Service at annual compensation of $2,500 or less, whose services are satisfactory, may be allowed the increase granted by Congress of $20 a month.

Citizenship and Sex.—All citizens of the United States who meet the requirements, both men and women, may enter this examination; appointing officers, however, have the legal right to specify the sex desired in requesting certification of eligibles.

Subjects and Weights.—Competitors will not be required to report for examination at any place, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects	*Weights*
1. Education and training	30
2. Experience	70
Total	100

Applications.—Applicants should at once apply for Form 1312, stating the title of the examination desired, to the Secretary of the Third U. S. Civil Service District, Postoffice Building, Philadelphia, Pa., or to the Secretary, United States Civil Service Board of Examiners, at any large first- or second-class postoffice in Pennsylvania, New Jersey or Delaware. Applications should be properly executed, including the medical certificate, to be executed by physician in Federal Service where possible, but excluding the county officer's certificate and both vouchers, and must be filed with the undersigned prior to the hour of closing business on April 5, 1923.

Further information in regard to these examinations can be obtained from the undersigned.

Secretary, Third U. S. Civil Service District,
402 Postoffice Building, Philadelphia, Pa.

THE VISIT OF M. COUE

Emile Coué, druggist of Nancy, France, has come and gone, heralded and accompanied by a campaign of advertising which has rarely been equaled, making promises of hope to the helpless and afflicted. His visit to Chicago gave the opportunity to hear M. Coué and to observe his methods. The man himself gave an impression of sincere, though naive, earnestness. He seemed childishly pleased with the testimonials he had received, and genuinely convinced that he had made a discovery of great benefit to mankind. Of the many cults that have grown up around such methods of healing, this appears to be the first that has not been erected on a religious basis with more or less specific claims of Divine inspiration, a lack of the mystical which will probably result in speedy oblivion. Coué was careful to insist that he is not "a healer" or "miracle worker," and protested against the demands that he exhibit his powers: demands that were an inevitable result of the publicity he has received. M. Coué claimed that much of human suffering and disability is psychic in origin, the outcome of faulty thinking. All that is necessary for its relief is a change in the mode of thought. This can be achieved by the persistent and insistent repetition of a formula, which disavows the trouble. He acknowledged that some things cannot be changed, as for example the loss of a leg, and that it is useless to attempt "the impossible." However, despite the protestations that he will not attempt "the impossible," Coué frequently finds it "impossible" only when he fails. One of the patients subjected to "treatment" at the Chicago meetings was an elderly woman, emaciated, feeble, short of breath, and with every appearance of cardiovascular disease. This poor woman was urged, stimulated and encouraged to walk vigorously, even to run. Under the stimulus of the excitement, she succeeded temporarily by the exercise of every reserve of energy, and after having served the purpose of this ruthless demonstration, retired from view, to sink panting and exhausted in a chair. No more serious result was evident, but risks had certainly been taken without thought to the possible dangers, which were obvious to any physician. The atmosphere of the Coué demonstration contained much to recall the vaudeville hypnotist, now almost extinct; the magic words, the mesmeric passes and even the old parlor trick of suggesting to members of the audience that they could not separate their hands, after they had pressed them tightly together, all bring back memories of the professional hypnotist. Had it not been for the pathetic background of the crippled, deformed and disappointment-doomed dupes that filled the stage, the scene would have been humorous. The methods and theory with which Coué works are as old as history. Nancy, the town from which he came, was the home of a school of scientific hypnotism, under the leadership of Liébeault and Bernheim, which was famous in the sixth and subsequent decades of the last century. It is error to assume that physicians have ignored such merits as do underlie these practices. The abrupt relief of hysterical symptoms by suggestion and persuasion is a commonplace in the practice of the average physician. Suggestion has a distinct place in therapeutics; unconsciously, it is used by every successful physician in the form of encouragement and optimistic prediction. It is the basis of Eddyism. But suggestion, while it may, and often does, give temporary relief, does not cure; it must be accompanied by investigation and remedy of the underlying causes, whether psychic or physical.—*Jour. A. M.A.*, Feb. 17, 1923.

INFLUENCE OF VARIOUS SYMPTOMS IN THE PROGNOSIS OF PULMONARY TUBERCULOSIS

The comparative value of certain symptoms in cases of pulmonary tuberculosis which aid clinicians to predict for their patients something of their ultimate chances of recovery is discussed by F. B. Trudeau, Saranac Lake, N. Y. (*Journal A. M. A.*, March 24, 123), on the basis of the present condition of 980 patients. The way the disease began apparently plays little or no part determining in its future course. Only 53 per cent of these patients whose sputum was positive are well and working, as contrasted with 79 per cent among the negative cases, while the mortality among the positive cases, from five to eleven years after discharge is 32 per cent, as compared to only 6 per cent in the negative cases. Sixty-one per cent of the hemoptysic patients are well and working, as compared to 65 per cent of nonbleeding patients, while the death rate is practically the same for the two types of cases; namely, 23 and 22 per cent. The beneficial importance of a gain in weight is very evident. More than 67 per cent of these showed a gain in weight averaging 8½ pounds (3.8 kg.), as contrasted with only 28 per cent who lost weight, and approximately 5 per cent whose original weight remained stationary. Among those who gained, the figures for the "wells" and "deads" are 67 and 20 per cent, respectively, contrasted with 57 and 27 per cent of those who lost weight. Patients whose weight remained stationary did practically no better than those who showed a loss of weight. The symptomatic importance in prognosis of the pulse is emphasized. Cases are rated as "pulse positive," in which a pulse rate of 90 or over persists for five consecutive days, and diagnosis fails to reveal any other cause than tuberculosis. Sixty-nine per cent of the negative pulse patients are well and working, as compared to only 49 per cent of those having tachycardia, while only 16 per cent of the former class are dead, as compared with 38 per cent of the latter. Cases are classified as "fever positive" when the patient's temperature was 99.5 F. or over for five consecutive days, which could not be explained by any other cause than tuberculosis. The percentage of "deads" among febrile patients is nearly as great as the percentage of "wells." A positive family history seems not to have any prognostic value.

THE
MEDICAL SOCIETY OF DELAWARE

ADDRESS

ON MEDICAL ORGANIZATION*

OLIN WEST, M.D.

CHICAGO

I want to express my very sincere appreciation of the privilege extended to me in representing the American Medical Association, as its Field Secretary at this, the 133d annual meeting of the Medical Society of Delaware. When I read the charter of the Medical Society of Delaware yesterday, it thrilled me to see that it was dated 1789. My state medical association will within the next dozen years celebrate the 100th year of its existence. I recently had the privilege of attending the annual meeting of the Medical Society of the State of Pennsylvania, which I recall is more than seventy years old. There must be some reason why medical societies can exist for 75, for 100, for 133 years. There must be some purpose, some destiny for the Medical Society of Delaware to perform. There must be some virtue in medical organization.

The scheme of medical organization in the United States is wonderfully comprehensive, and is almost perfect. There is a tendency, however, to get away from the original scheme of organization, and I was greatly pleased in looking over the constitution of the Medical Society of Delaware to find that it is virtually the same as that adopted at the suggestion of the Committee on Reorganization of the American Medical Association in 1902. Most of you are familiar with the scheme of the organization of the medical profession in this country, which makes the county medical society the basis and unit of organization, the county medical societies composing the state medical association or society, and the state medical associations composing the federacy which we know as the American Medical Association.

There are in this country more than 150,000 physicians. The membership of the American Medical Association, made up of the membership of the component county and the constituent state associations, is something more than 80,000—approximately 84,000. Thus we have a very large unaffiliated body of physicians who are not connected with medical organization, and in that fact is to be found one of the weaknesses of our organization to-day. And while there are so many outside the pale of organization, it is unfortunately true in some places, here and there, that there are some men in the organization who should not be in. The man who belongs to his medical society just because by virtue of his membership he is entitled to certain privileges in other societies, or the man who belongs to his medical society because by virtue of that membership he may secure reciprocity if he moves to another state, is certainly not worth much to his society. So it appears to us who are studying medical organization in this country that while we want and greatly need to bring into the organization many of those who have not become affiliated, we also want to scrutinize very carefully all applications for membership in our Association. The American Medical Association has made it possible for any society in this country to secure information about almost any man who may make application for membership in any society. Several associations are taking advantage of that service and do not accept applicants until they have the record as it is compiled at the headquarters of the American Medical Association.

Another trouble is that so many of our societies exist in name only. They do not meet regularly, and when they do meet a comparative few perform all the work of the society. It has been estimated that 15% of the men in the medical societies do all the work, scientific and otherwise. My own observation, after a service of some ten years as a state association secretary, is that 10% is nearer the true figure, rather than 15%, and thereby hangs the tale. Whenever a state medical association or whenever the national organization takes definite action on a proposition, it is supposed to represent the wishes and sentiments of the entire American medical profession. Sometimes it does; sometimes it does not altogether do so, largely because in the component county medical societies, few of the members will participate in the deliberations and the work of the societies. It is extremely difficult under such circumstances to find just where the weight of opinion lies.

I believe that the success that has come to medical organization in this country, which has been a very measurable success, in spite of those little faults that might be mentioned, has been due to the fact that our medical societies have, for the most part, devoted themselves to scientific matters. It seems, from my study of the history of medical organization, to have been the purpose of the founders of organization to make the medical societies first of all useful for the purpose of increasing scientific knowledge and making the medical profession as nearly scientifically perfect as possible; second, to serve, by reason of such perfection as they might so attain, the very best interests of the public. There are those, however, who seem to have the feeling that what we need instead of organization, with officers and leaders, is unionism with agitators. There are mighty few of that kind, but there are some, and it is the duty of the medical organization to oppose and stop, as far as can be done, the efforts of those who take that view of the purposes of organization.

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*Address delivered before the Medical Society of Delaware, Dover, October 10, 1922.

It seems to me that the real spirit, or what ought to be the real spirit of the American Medical Association, is exemplified in the life of the man who addressed you this morning—Dr. de Schweinitz, the President of the A. M. A.—a research worker to develop the truths of scientific medicine, a teacher to disseminate the truths, and a physician to apply the knowledge arrived at for the benefit of the public whom he serves. I had an officer of the American Medical Association say to me the other day that never in its history had it had a President who had given as much detailed attention to the work of his office as President, nor who had made as many sacrifices as President of the American Medical Association for the benefit of the profession as has Dr. de Schweinitz.

It is my privilege to appear here as the representative of the American Medical Association, as its Field Secretary. I do not come with any suggestions whatsoever to the Medical Society of Delaware from the headquarters of the American Medical Association, but rather to secure suggestions, if I may, as to how the facilities and the resources of the national organization may be made more valuable and more useful to this society, and to find what you have here that is good that I may be able to pass it on to other state medical associations, so they can use it to their advantage.

The work of the American Medical Association is a tremendous work, and it might interest you for me to tell you just a little about it.

I have been greatly interested in listening to all these papers here this morning, in every one of which I find something to remind me of the activities of the Association in Chicago. The question of "Specialism and Coöperation" that was so splendidly brought out by Dr. de Schweinitz, and many of the other things that have been touched on incidentally and indirectly in those papers, have reminded me of activities that have been carried on by the American Medical Association in the interest of the profession and the general public. The last speaker talked about proprietary medicines. I do not believe that the profession of this country pays as much attention as it should to the very splendid work of the Council on Pharmacy and Chemistry, and the laboratory of that organization. I frequently wonder where we would be from the standpoint of unscientific therapeutics had it not been for the work of that Council. I wish every member of this Society might come to Chicago, and spend an hour or two in the offices of the Council and in its laboratory, and see just what the work of that Council is and how it is done. Carefully and thoroughly and persistently they have gone into the claims that have been made for hundreds and hundreds of "remedies," so-called, of all sorts and kinds. You should see how many hundreds have been proved worthless. It is a pity that more of the medical profession do not avail themselves of the information that has been made available by the work of the Council on Pharmacy and Chemistry.

You are familiar with the work of the Council on Medical Education and Hospitals which, of course, has been far-reaching in the matter of medical education in this country. That Council is now devoting itself, in addition to the work that it has been carrying on, to a study of clinics and dispensaries, and is carefully considering questions relating to group practice that have been recently raised.

The Council on Health and Public Instruction which for years has carried on a work for public education, has been divided now by the creation of the Bureau of Legal and Legislative Medicine. There are a great many in our membership who seem to think if they can get legislation enacted, all ills and evils will be cured. I believe if we can stop the passage of some legislation, that we will accomplish a great deal more than if we secure the passage of so much legislation. That is merely a personal opinion, and is not to be regarded otherwise.

The Bureau is now devoting itself to numerous problems that are of interest to members of the profession throughout the country. The question of medical licensure is being studied. The matter of the regulation of narcotics is being studied carefully, and there has been some effort made to secure relief from the burdensome and ever-changing rules and regulations that are being imposed on the medical profession in the dispensing of narcotics. I do not know just what the Bureau has in mind with respect to the control of narcotics and narcotic legislation. I hope that it will eventually get to the place where they will influence Congress and secure relief from the unjust imposition of a $3 tax on the physicians who must use narcotics in the treatment of diseases.

The regulation of the cults is a thing that seems to be of very acute interest to the medical profession throughout the country. I believe if the profession would read the story of medical organization during the last 75 years, that they would get a new viewpoint about this cult business. I wonder what would happen if we could legislate them all out of business by to-morrow morning? There would be as many to-morrow night. They have always been here, and I have no doubt they will always be here—legislation or no legislation. I understand that an effort is to be made on behalf of the medical profession throughout the country to secure the enactment of laws which will require all persons who want to practice the healing art to conform with certain educational requirements. That, I believe, is a fair basis for a law, and as I understand the matter, is the purpose that is uppermost in the minds of the men throughout the states who are dealing with this particular subject. The Bureau of Legal and Legislative Medicine hopes to be of service in connection with that matter and many others that I might talk to you about.

The Council on Health and Public Instruction, as I told you a while ago, has been carrying on for many years an intensive effort to do what it can toward disseminating the truth about medicine. It is hoped in the very near future that the publication of a lay medical journal will be begun. Perhaps you had better call it a magazine. Considerable work has been done looking to the early publication of this magazine, and it is not improbable that before the middle of the summer next year, the publication of a lay medical magazine by the American Medical Association will be an accomplished reality. It is believed that this will render a most helpful service to the people and to the profession.

There is one other publication that I want to take time to bring to your attention, and that is the Bulletin of the American Medical Association. This Bulletin is now a very modest little publication, but it is hoped to enlarge it and to extend its usefulness, and that it may be used by the officers of state, county and district medical societies and by the members of those component societies as a medium for exchange of ideas and opinions that are of interest to the medical profession, aside from those relative to purely scientific matters. This bulletin is being sent to all the officers of state and county associations. The subscription price is nominal—only 50c a year. We hope to have the county societies subscribe to this bulletin in groups, and if they will do that, the subscription price will be reduced to a sum even less than 50c a year. I want to appeal to the officers and members of the Medical Society of Delaware to help us make this little bulletin grow and help it make for itself a place for useful service in the interest of medical organization throughout this country.

I want again to express my sincere appreciation of the privilege of addressing you. I should like to feel that I had time, without imposing on you, to tell you more in detail about the work of the American Medical Association. I am authorized to extend a pressing invitation to every member of any society that I may have the privilege of addressing, to come to the headquarters of *your* A. M. A. Look it over from top to bottom, and see for yourself what is there, what it is being used for, and investigate as carefully as you may wish, the purposes and the plans that are in operation.

EDITORIALS

GREETINGS FROM DELAWARE

The Medical Society of Delaware is one of the oldest such societies in the United States, having been incorporated by special Act of the Legislature at Dover, February 3, 1789. Our last annual meeting was, therefore, the 133d such meeting—a feat of which few societies of any character anywhere can boast. Our hoary age and honorable traditions command the respect of all who are familiar with them. Thus, in this, the first number of our joint medical journal, we come to the great state of Pennsylvania not as parvenus nor as errant sons returning to the fold, but rather as elder brothers who believe that by our united efforts a greater good can be accomplished for the professions of both states. We hope it may so prove.

Our little state, for good and sufficient reason styled the "Diamond State," has ushered in what should prove only the beginning of a really great journal. As was Delaware the first state to ratify the Federal Constitution, so is she the first state, of several approached, to ratify the amalgamation of several journals that one greater publication may be attained in this territory. As was Delaware the state that cast the deciding vote for the Declaration of Independence, so is she the state that casts the deciding vote in subjugating local efforts that larger regional efforts may be possible. This scheme of journal amalgamation is not unique in this country, there being three such journals now, but the present instance should develop into the largest, the best and the most influential of all such journals.

Delaware has no medical teaching institutions, and hence has of late years not been a great contributor to medical literature. The standard of practice here, however, will compare favorably with that of most communities. It is to be hoped that this new journal may stimulate our men to greater literary efforts, for we believe we have many men who are hiding their light under a bushel. Our leaders need only a little sympathetic encouragement to make them come out; and this, we believe, the new journal will supply. Great men and great things do not necessarily have to come from great communities. The first president of our State Society, James Tilton, was also the first Surgeon-General of the United States Army. Who knows but that we may now be harboring more Tiltons?

We offer our greetings to our neighboring brethren, and rest assured that with their coöperation the Atlantic will develop into one of the outstanding medical journals of the country. We shall endeavor to do our part towards this end. We are confident that this effort will result in a much better knowledge and understanding of the profession of one state with that of the other—an end quite worthy of itself. For ourselves we merely bespeak your kind indulgence and assistance. Let every member of both societies do all within his power to assure the unqualified success of the Atlantic Medical Journal.

W. E. B.

DOCTORS AND LEGISLATION

One often wonders that physicians, with the tremendous influence they wield, accomplish so little when they promulgate legislation affecting public health. In Delaware, as elsewhere, they are laughed out of court, any bill presented by doctors being considered as a joke, or else as some practical scheme which deserves but scant attention.

There are several reasons for this attitude on the part of the layman.

The doctor is regarded as a "healer." His business is to alleviate physical suffering and "cure" disease. Any person who can accomplish this is, in the opinion of the layman, a doctor. A man in pain is intent on one thing only—to obtain relief. Whether that relief is afforded by a college professor, a country doctor, a quack, a chiropractor, a Christian Scientist or a bottle of colored dishwater is immaterial to him, so long as the pain disappears. He, therefore, judges the doctor, not by college standards, but by what he can do or promises to do for his particular ailment. Unfortunately, the average layman knows nothing about self-limitation of infectious diseases; nor is he aware of the tendency on the part of tissues and organs to maintain a normal balance. He, therefore, gives credit and praise to anybody or anything associated with his recovery. Hence, Lydia's compound is as standard a remedy as digitalis, and a chiropractor as deserving of credence as the greatest internist. Appreciation of preventive medicine and public health requires intelligent vision, and of that the average layman—he who sits in our legislative halls—is lamentably devoid.

When we turn to the physicians, we find them extremely individualistic, self-centered and mostly disunited. Petty jealousies tend to destroy whatever feeling of fellowship there is left of the college days. In matters pertaining to public interests, the rank and file are indifferent, while the few leaders are mistrusted and frequently abused. The doctors have not learned to play or work together, and when the need of a solid organization becomes imminent, they are found strong only on paper. "My house is on the outskirts," runs a Russian proverb, and this characterizes the attitude of the average physician. Under these circumstances a successful fight at the legislature is out of the question.

The only remedy is education of the public on the one hand and organization of the medical profession on the other—not paper organization, but strong, virile societies in which every member considers it his duty and privilege to attend meetings and participate actively in the affairs of the society.

We have been thinking of the practice of medicine in terms of science and art; let us think of it as a professional guild with all the obligations and loyalties that imposes upon its members.

A. R.

INDICATIONS FOR TONSILLECTOMY

The indiscriminate slaughter of innocent tonsils and the "tonsil drives" carried on in a number of cities remind one of the good old days when there was not an ovary that was safe from the onslaught of the abdominal surgeon. It was said then that the reason a famous surgeon left Philadelphia for Baltimore was that he removed all the ovaries in Kensington and was anxious to transfer his activities to a virgin field. The appendix, as we know, was taken up next, and lately, the tonsils and the teeth.

From the standpoint of surgical risk, it is a perfectly harmless procedure, particularly in children, to remove healthy tonsils. It is a question, however, whether the individual whose healthy tonsils are guillotined is not deprived thereby of organs essential to the body economy. We know little about the function of the tonsils, yet our observation of the workings of other organs and tissues in the body should lead to the conviction that nature demands from every bit of tissue the performance of some useful work. "No work—no food" applies to the human organism. (We wish that the same rule could be applied to our social body.) The fact that no apparent ill effects follow the removal of healthy tonsils merely goes to show that the function is probably minor in character; but it is there nevertheless.

When it comes to diseased tonsils, there is no question about the imperative necessity of their removal. Recent studies have demonstrated the far-reaching effects of focal infection; and infection of the tonsils is frequently the starting point of endocarditis, chorea and arthritis. The great problem is to separate the sheep from the goats—to determine which are and which are not infected tonsils.

A very definite aid in this direction is the fact that whenever infection involves the lymphatics, the lymph nodes become enlarged and painful, and frequently undergo suppurative changes. Infected tonsils cause enlargement of the lymph nodes which drain that particular area, and a knowledge of the distribution of these nodes and their relation to the tonsils is essential.

The pharyngeal tonsils, which are situated below the body of the sphenoid bone and lie between the posterior pharyngeal wall and the spinal column, receive lymph from the posterior nasal fossa, the vault of the pharynx and surrounding tissues. The efferent lymphatics enter the retropharyngeal space, pass downwards between the insertion of the rectus capitus anticus major muscle and the cervical vertebræ, then through the sheaths of the great vessels to the posterior border of the sternocleido-mastoid. Here they turn sharply and directly outwards into a gland situated just below the tip of the mastoid process. Therefore, enlargement of this gland indicates infection of the pharyngeal tonsils.

The efferent vessels from the faucial tonsils enter glands placed just beneath the anterior border of the sternomastoid.

The submaxillary glands lying along the rami of the jaw drain the gingival, dental, glossal and mental areas, and enlargement of these glands points to infection of the gums, teeth, tongue, chin and the thyroid area.

With the condition of the lymph nodes as a guide, we can decide in each case the fate of the tonsils, the only exception being hypertrophied tonsils, which while not the seat of infection, interfere mechanically with proper breathing.

A. R.

LEGISLATIVE NOTES

The present session of the Legislature brings to mind the most unpleasant thought that the profession of medicine has not been as wide awake as it should have been. There seems to be little chance that either the welfare bill or the alcoholic medicinal bill will get out of committee, to say nothing of passing. While our minds are necessarily now centered, somewhat belated, on medical laws, let us plan to meet the menace of the chiropractors. There are scarcely a dozen here now, but we have advance information that some 20 are planning to come here within the next few months. Such practice is in violation of our medical practice act, in that they practice the healing art without due licensure. That they will apply to the next Legislature for such legalization is practically assured.

In the meantime there bids fair to be a great influx of them anyhow. If legalized, with their own examining board, Delaware will have to go through the same terrible ordeal that New Jersey suffered, where under their own board 714 were licensed in one year, practically without any examination at all. This farce had to stop when New Jersey passed their new law two years ago, making examination in the fundamentals necessary, and examination in each peculiar school of therapy under their own school. This law has effectively closed that state to the chiros, and Delaware is going to be the dumping ground for a lot of them unless means are taken to prevent it.

We should imitate the New Jersey law, or else adopt something similar to the law proposed for Minnesota. Since this latter proposition is somewhat new, we give it in full below. The law in New Jersey will be discussed at a later time.

Following is the proposed Basic Medical Practice Act in full:

Bill for an act defining the practice of healing, creating a board of examiners in the basic sciences and establishing its powers and authority.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Sec. 1. Definitions. For the purposes of this act the practice of healing is defined as follows:

A person practices healing who shall offer or undertake, by means other than mental or spiritual, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition. The practice of healing includes the practice of medicine and surgery, osteopathy, chiropractic and any other cult, system, or type of healing other than mental or spiritual, that now is recognized or hereafter may be recognized in this state, but does not include the practice of dentistry nor the diagnosing, treating, operating or prescribing for any disease, lesion, pain, injury, defect, deformity, or physical condition of the human teeth, alveolar process, gums, or jaws, or the replacement of teeth by artificial ones, or correcting the malpositions thereof. The sciences essential to the practice of healing are defined as Anatomy, Chemistry, Pathology, and Physiology, hereinafter called the basic sciences.

Sec. 2. Board of Examiners in the Basic Sciences.

There is hereby created and established a board to be known as the State Board of Examiners in Basic Sciences, hereinafter called the board.

Sec. 3. Appointment of Board by Governor and Qualifications of Members.

Within thirty days after the passage of this act, the Governor shall appoint the state board of examiners in the basic sciences, consisting of four residents of Minnesota who shall be appointed for a term of four years or until their successors are appointed, except that, of the first members, one shall be appointed for one year, one for two years, one for three years and one for four years. One member of said board shall be a competent anatomist; one shall be a competent chemist; one shall be a competent pathologist; one shall be a competent physiologist. No member of said board shall be engaged in the practice of healing.

Sec. 4. Organization and Procedure.

Within thirty days after being so appointed, said board shall assemble and organize by electing a president, vice-president and secretary-treasurer. Said board shall have a common seal. They shall adopt minimum standards of preliminary education.

No rule of said board shall discriminate against any school or system of healing. Three members of said board shall constitute a quorum. Said board shall meet on the third Tuesday of February, March, June, August, September and December in each year and at such other times as a majority of the board may deem necessary. The secretary shall keep a record of all of its proceedings, including a register of all applicants for examination, giving their ages, educational qualifications and the results of their examinations. Said book records shall be prima facie evidence of all matters therein recorded.

Sec. 5. Fee, Examination, Certificate.

Any person desiring to practice healing in this state shall apply to the secretary of said board and pay a fee of ten dollars. The examinations conducted by the board shall be both practical and written and shall be held in the laboratories of the College of Science, Literature and Arts of the University of Minnesota. If a candidate shall attain a grade of 75 per cent or more on all four subjects he shall receive a certificate signed by the president and secretary and bearing the seal of the board. If he fails in one subject he may be reëxamined in that subject within one year without further fee. If he fails in two or more subjects he shall not be examined until after the lapse of one year and then only upon reapplication and the payment of a further fee of $10.00.

Said board may issue a certificate to any applicant who presents acceptable evidence of having passed examinations in the basic sciences aforesaid before a legal examining board of another state, the National Board of Medical Examiners, or a foreign country, provided the board of examiners in basic sciences is convinced that the educational and examination standards were as high as those set forth in the rules of said board. Applicants for such acceptance of previous examinations shall pay a fee of $5.00.

Sec. 6. All fees received by said board shall be paid to the secretary-treasurer, who shall forthwith deposit the same with the state treasurer, to be kept in a separate fund for the use of said board; which fund shall be paid out only on written orders signed by the secretary-treasurer of said board. No expense shall be incurred by said board other than that which may be covered by such fees. The secretary-treasurer shall give a bond in such sum as the board may deem necessary. He shall on or before August first of each year file with the Governor a report of all the receipts, disbursements and transactions of said board for the preceding fiscal year. The members of the board shall be entitled to ten dollars per day and necessary expenses while attending meetings and conducting examinations of the board.

Sec. 7. Certificate required before examiation for practice of healing.

No board at present existing or which may hereafter be established for the examination and licensing of practitioners of healing shall admit any candidate to take its examination nor license any candidate by reciprocity nor in any other way until said candidate presents an official certificate of having successfully passed the examinations conducted by the board of examiners in the basic sciences or an official certificate of said board of examiners in the basic sciences accepting the results of a previous examination, as provided in Sec. 5 of this act. Any licensing board may accept the certificate of the examiners in basic sciences in lieu of the examinations in said basic sciences required by law to be conducted by such licensing board.

Sec. 8. Nothing in this act shall apply in any way to any person licensed to practice any system of healing in this state prior to the passage of this act.

Sec. 9. This act is supplementary to existing laws and not a repeal thereof except in so far as this act be inconsistent with any provision of existing laws.

Sec. 10. Said Board of Examiners may revoke any certificate of any person guilty of immoral, dishonorable or unprofessional conduct, but before this is done the holder of said certificate shall have thirty days' notice and after a full and fair hearing of the charges made, by a majority vote of the whole Board, the certificate may be revoked, subject, however, to the right of the holder of said certificate to appeal to the District Court of the proper county on questions of both law and fact.

Sec. 11. Any person violating any of the provisions of this act, or who shall wilfully make any false representation to the board of examiners in applying for a certificate, shall be guilty of misdemeanor, and upon conviction shall be punished by a fine of not more than one hundred dollars and not less than ten dollars.—*Minnesota Medicine.*

HOSPITAL NOTES

It begins to appear that the year 1923 will be an eventful one for Wilmington's hospitals. This city has always been deficient in hospital beds, if one accepts the rule that 5 beds per 1,000 of population is the proper standard. At present the capacity of the general and special hospitals (exclusive of psychopathic and tuberculosis hospitals) is as follows:

Hospital	*Beds*
Delaware	188
Physicians' and Surgeons'	90
Homeopathic	122
Jones	30
Walter	20

Since the population is approximately 110,000, this total of 400 beds is 150 less than the standard of the community should be. This shortage, in part, will be made up by a new institution to be conducted by the Sisters of St. Francis. The new St. Francis Hospital will be built on the block bounded by Seventh, Clayton, Eighth and du Pont Streets, and will have an initial capacity of 60 beds, to be increased ultimately by the addition of four pavilions to a total capacity of 225 beds. The new buildings and grounds will cost approximately $250,000, of which about half will be paid by the Sisters, and the remainder will be raised by the people of Wilmington. An intensive campaign is now being waged to secure these funds, the success of which is a foregone conclusion.

The main building will be 175 feet in length, three floors in height, with a fourth floor over the central portion. In addition to the 60 patients, it will accommodate 12 Sisters, 14 nurses, 2 internes and all necessary help. The equipment will be most complete and modern. It is understood that the new institution will be "open," at least so far as private privileges are concerned, though a staff is being considered for the public ward and dispensary work. When one considers the phenomenal success the Sisters of St. Francis have had in conducting hospitals all over the country, especially St. Mary's Hospital, Rochester, Minn. (the Mayo Clinic Hospital), there can be no doubt of the success of this new enterprise.

In addition to the above, the Physicians' and Surgeons' Hospital is planning an ambitious program of expansion, to occupy several years. The present quarters are inadequate in location, size, design and equipment, and it is proposed to remedy this by building the new units as they may be needed on the South Broome Street site, where the hospital already owns two whole city blocks, and where the contagious disease unit is now located. Plans are now being drawn by a leading firm of architects for the complete plant, and details of the first unit are nearing completion. The strictly first-class design of these units yields a plant second to none for its size, and while slightly more expensive than was at first anticipated, the increased expense is more than justified by the results, for a standard has been set locally that will stand for many years.

The first unit, which will temporarily house the whole hospital of 60 beds, will ultimately have a capacity of 90 beds. Other units will give the hospital a final capacity of 375 beds, the plans calling for a group of eight buildings. The style of architecture will be Georgian.

Rumors are very persistent that the Homeopathic Hospital will soon become an "open" institution, somewhat similar to the Physicians' and Surgeons' Hospital. This hospital, with its excellent location and beautiful buildings, has suffered severe losses this past year by the death of several of its leading physicians, and the influx of new members of the homeopathic school has reached an unprecedentedly low level. The fact that Hahnemann Medical College in Philadelphia is now the only Class A homeopathic school in the country may also have some influence on the local situation. There is no question that Wilmington, which has hitherto been one of the strongholds of homeopathy, will see a great decrease in the numbers and influence of this school in the future. This phase of the situation is not local at all, but is found throughout the country, and the closure of five homeopathic schools within the past year is only another indication of the general trend towards wiping out sectarianism in medicine. This is of itself most desirable, though many see in the present movement the ultimate extinction of homeopathy as a distinct medical philosophy. It is practically extinct now in its home country, Germany, and America seems to be its last battleground. Be that as it may, so far as Wilmington is concerned, the net immediate result seems to be the opening of the city's most beautiful hospital to practitioners of the regular school—a privilege many have long desired.

BOOKS RECEIVED

Physics and Chemistry for Nurses, by A. R. Bliss, Jr., A.M., Phm.D., M.D., and A. H. Olive, A.M., Ph. Ch., Phm.D. Third Edition thoroughly revised and rewritten and conforming to the requirements of the standard curriculum (1922) of the National League of Nursing Education. Philadelphia and London: J. B. Lippincott Company. Price $2.50.

How We Resist Disease (An Introduction to Immunity), by Jean Broadhurst, Ph.D., Assistant Professor of Biology, Teachers' College, Columbia University. One hundred and thirty-eight illustrations and 4 color plates. Philadelphia and London: J. B. Lippincott Company, 1923. Price $2.50.

Textbook of Anatomy and Physiology. For Training Schools and Other Educational Institutions. By Elizabeth R. Bundy, M.D. Fifth Edition Revised and Enlarged by Martha Tracy, M.D., Dr. P. H., Professor of Nutritional Hygiene, Women's Medical College of Pennsylvania, Philadelphia, and Grace Watson, R. N., Educational Directress, Philadelphia General Hospital Training School for Nurses. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. Price $2.50 net.

Textbook of Ophthalmology, by Hofrat Ernst Fuchs, Former Professor of Ophthalmology in the University of Vienna. Authorized translation from the Twelfth German Edition; completely revised and reset, with numerous additions specially supplied by the author and otherwise much enlarged by Alexander Duane, M.D., Surgeon Emeritus, Knapp Memorial Hospital, New York. With 455 illustrations. Philadelphia and London: J. B. Lippincott Company. Price $9.00.

Selected Papers and Addresses, by William Williams Keen, M.D., LL.D., Emeritus Professor of Surgery, Jefferson Medical College of Philadelphia. Philadelphia: George W. Jacobs & Company, Publishers.

Exercise in Education and Medicine (Third Edition). By R. Tait McKenzie, M.D., LL.D., Professor of Physical Education and Physical Therapy and Director of the Department of Physical Education, University of Pennsylvania. Octavo of 601 pages, with 445 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $5.00 net.

Nutrition of Mother and Child, by C. Ulysses Moore, M.D., M.Sc., Instructor in Diseases of Children, University of Oregon Medical School, etc. Including menus and recipes by Myrtle Josephine Ferguson, B.S., Professor of Nutrition, Iowa State College, Ames, Iowa. With 33 illustrations. Philadelphia and London: J. B. Lippincott Company. Price $2.00.

Vital Statistics. An Introduction to the Science of Demography. By George Chandler Whipple, Professor of Sanitary Engineering in Harvard University. Second Edition. New York: John Wiley & Sons, Inc., 1923. Price $4.00 net.

Impotency, Sterility and Artificial Impregnation, by Frank P. Davis, Ph.B., M.D. Second Edition Revised and Enlarged. St. Louis: C. V. Mosby Company, 1923. Price $2.25.

Clinical Laboratory Methods, by Russell Landram Haden, M.A., M.D., Associate Professor of Medicine, University of Kansas, School of Medicine, Kansas City, Kansas. With 69 illustrations and 5 color plates. St. Louis: C. V. Mosby Company, 1923. Price $3.75.

Essentials of Surgery. (For student and graduate nurses and for those interested in the care of the sick.) By Archibald Leete McDonald, M.D., The Johns Hopkins University. Second edition revised with 49 illustrations. Philadelphia and London: J. B. Lippincott Company, 1923. Price $2.50 net.

Optical Methods in Control and Research Laboratories, by J. N. Goldsmith, Ph.D., M.Sc., S. Judd Lewis, D.Sc., B.Sc., F. Twyman, F. Inst. P. Vol. I, Second Edition, January, 1923. Published by Adam Hilger, Ltd., 75A Camden Road, London, N. W. 1, England.

An Orthopedic Surgeon's Story of the Great War. H. Winnett Orr, M.D., Formerly Lieutenant Colonel, Medical Corps, United States Army. Lincoln, Nebraska, December, 1921.

Labyrinth and Equilibrium, by Samuel Steen Maxwell, M.S., Ph.D., Professor of Physiology in The University of California. Illustrated. Philadelphia and London: J. B. Lippincott Company. Price $2.50.

BOOK REVIEWS

PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE. J. J. R. Macleod, M.B., Professor of Physiology in the University of Toronto, Assisted by Roy G. Pearce, A. C. Redfield, N. B. Taylor, and by others. Fourth Edition. St. Louis: C. V. Mosby Company, 1922.

Two years have elapsed since the third edition of this valuable work was published. Much water has gone down to the sea in these two years, and all the grist that it has brought to the medical profession will be found clearly recorded in this exceptionally interesting book.

The cardiac output, intracardiac pressure, the capillary circulation, the acid-base balance in the blood stream, the normal electrocardiogram, the movements of the stomach, mountain sickness, and pancreatic diabetes, are some of the subjects that have been rewritten or materially changed.

In regard to the cardiovascular function, it is demonstrated that as long as compensation exists, the amount of dilatation and the tone of the heart muscle during diastole determine the output during systole. The influence of nutrition on the cardiac output, that is on the response and demand, is clearly brought out and constitutes one of the practical points which appear whenever possible throughout this work. They are found with very gratifying frequency, and with authoritative demonstrations which carry conviction to the reader. The effect of cardiac stimulants—Strophanthus and digitalis—in assisting to bring about cardiac compensation will be read with satisfaction by many. In describing the estimation of cardiac efficiency by observations on pulse rate and systolic pressure at short intervals after measured exercise (the best method up to the present time), the Barringer claim that an initial drop in systolic pressure immediately after exercise means decompensation, or at least low reserve is not supported so long as the pulse rate and the systolic pressure return to normal within four minutes.

The subject of the emptying of the stomach under normal and under pathological conditions is handled in a masterly way. It is another example of Macleod's practical point of view in everything that he touches.

While he undoubtedly is correct in his assertion that under normal conditions gravity has nothing to do with the emptying of the stomach, he fails to consider that in certain cases of marked ptosis, in which the full stomach sinks to or even into the pelvis, there is a mechanical obstruction due to kinking which can be overcome or corrected by gravity when the patient is put in the proper position. This may be demonstrated on a movable fluoroscopic table, and may be taken advantage of in appropriate cases by having the patient lie on the right side on a bed, the foot of which is elevated 10 or 12 inches, for two hours, more or less, after each meal. The futility of gastro-enterostomy in cases with no pyloric obstruction is well shown.

The acid-base balance in the blood stream is exhaustively discussed and new evidence is introduced. The danger of overdoing in the exhibition of alkalies is made evident. "Fools rush in where angels fear to tread." The nature of diabetic acidosis is clearly discussed and the various reactions of different diabetic patients to starvation is emphasized more rationally than in any other work with which I am familiar.

The epoch-making discovery of a method of producing an extract of the islands of Langerhans which will effectively control corbohydrate metabolism and ketonemia in depancreatized laboratory animals and in human diabetic patients is modestly but clearly set forth.

The section on "the central nervous system and the control of muscular activity," rewritten for the third edition by A. C. Redfield, remains unchanged and is still the best thing in that line in medical literature, pregnant with scientific facts inviting clinical application.

With surprise and with unusual satisfaction one finds the index and the paging of subjects in the fourth edition identical with those of the third edition, in spite of the many changes in substance matter. L. L.

BRONCHOSCOPY AND ESOPHAGOSCOPY, by Chevalier Jackson, M.D., F.A.C.S., Professor of Laryngology, Jefferson Medical College; Professor of Bronschoscopy and Esophagoscopy, Graduate School of Medicine, University of Pennsylvania. Octavo of 346 pages with 114 illustrations and 4 color plates. Philadelphia and London: W. B. Saunders Company, 1922.

This volume is a manual of peroral endoscopy and laryngeal surgery based on an abstract of the author's larger work, "Peroral Endoscopy and Laryngeal Surgery." With this abstract as a starting point, the author by making various corrections and revisions, together with numerous additions, has brought the subject of endoscopy up to date as far as is possible within the limits of a working manual.

The author has systematically taken up armamentarium, the anatomy of the tracheobronchial tree and esophagus (endoscopically considered), technique for various endoscopic procedures together with symptoms indicating such procedures, and carefully explained the solution of mechanical problems encountered in the removal of foreign bodies from the air and food passages. He considers diseases of the tracheobronchial tree and esophagus in which endoscopic procedures are indicated, and concludes with an excellent chapter on tracheotomy and the treatment of laryngeal stenosis.

The work crystallizes the practical experience of years of careful observation in a large clinic with an almost unlimited amount of material, and presents the various endoscopic procedures in the author's inimitable, clear, concise manner. It is well illustrated with many original drawings.

No student of endoscopy can afford to be without this working manual prepared by such an eminent teacher. E. J. P.

THE EVOLUTION OF PUBLIC HEALTH NURSING, Annie M. Brainard. W. B. Saunders Company, Philadelphia, Publishers. 454 pages.

Miss Brainard has written a very readable history of the growth of the Public Health Nursing Idea, tracing its germination back to the old practice of "looking after the sick" at the beginning of the Christian era. The early "ordained" deaconess of the primitive church was the forerunner of to-day's Public Health Nurse whom she, however, not remotely resembled. In the first century sanitation meant nothing; medical service was unknown. Not a hospital existed. Such "refuges" and "asylums" as there were, sheltered horrible practices.

Traced through the gloom of the early centuries the semi-organized work of the early deaconesses can be distantly connected with the founding of the first hospital, before the close of the fourth century. Shortly thereafter all the principal small cities of the Roman Empire had them; two were in Constantinople, one in Bethlehem; Alexandria had seven special houses opened for lying-in patients.

Coincidentally, as monasteries came into being some had attached hospices of strangers and sick. But for a thousand years there was no organized care of the sick in their homes. Miss Brainard says: "Constant war seemed the normal state; the 'social question' did not exist; health was a matter of luck." Floods, earthquakes and cyclones were common; pestilence was rampant; epidemics ran frightful courses. The practice of medicine, such as it was, was in the hands of the monks; the church supervised midwifery; and a few uncloistered religious orders cared for the sick poor.

In the twelfth and thirteenth centuries a few illustrious women were the mainsprings of certain nursing orders sanctioned by the Church, not doing true nursing to be sure, as still very little was known of health measures. The long slow growth of human brotherhood, love of neighbor, responsibility for one's fellow creatures' comfort, is traceable by the discerning student back to this first group.

In the stretch of years from the thirteenth to the eighteenth centuries, three great movements hastened the visiting nurse idea. These were, (1) a new humanity, (2) the growth of medical science, (3) the growth of nursing into a profession.

Cruelty in industry, in prisons, and slum degradation awoke the hearts of the lovers of men. Sanitation and preventive medicine had been born and quickened its pace toward the close of this period, making ready for the day when Florence Nightingale could dare think and speak of "health" nurses. She stepped into the foreground in the nineteenth century and from that moment nursing service took on a different form.

There had never been anything quite like her, highly educated, from cultured surroundings, widely traveled, experienced and possessing a practical and soaring enthusiasm, all of which made her ready for the great episode in the Crimea.

Through her, nursing became a profession, and with Mr. William Rathbone, a layman who had "seen a vision" to foster a working plan in Liverpool, there was founded in that city, under great difficulties, a district nursing service.

Much relief work was done by this first group, but the primary idea, to provide nursing care for the poor sick was kept intact, and the movement spread through England. Women of the highest type were held to be essential for the success of such an undertaking, and against much resistance high standards were made and maintained. Bedside nursing, home instruction in hygiene and sanitation was the task for this new organization.

Shortly, villages and hamlets began to beg for similar service. Rural nursing, with its vast maternity problem, had always been pressing, and finally "cottage nurses" appeared as a distinct group just prior to 1890.

All this was in the old world. For the new, New York had its first "hospital" in 1658—it was nothing but a rude shelter. In 1816 Bellevue was combined with the workshop and shortly became "workhouse, almshouse, insane asylum and orphan asylum." Blockley was opened in 1731.

Two pioneer nursing societies were started, one in Charleston, South Carolina, and one in Philadelphia in the same year (1839). Except for these two, no record of any systematic care of the home sick is found before 1877, when "Missionary Nurses" were started in New York State. In 1878, Dr. Felix Adler, of the Ethical Culture Society, launched a group of nurses who were to pay special attention to the sick in the homes.

In 1886 the first American associations were organized, one in Boston, one in Philadelphia, for the sole purpose of providing skilled care in the home. Thus there was introduced into America one of the most valuable social agencies in modern times. Chicago, Buffalo, Kansas City, Baltimore, Providence and Cleveland followed suit.

In 1893 nurses' settlements started. Small numbers of trained nurses living among the people whom they cared for, carried out the modern "settlement" idea. The first of these was the now famous Henry Street Settlement, under Miss Lillian Wald, to-day the best loved woman on the East Side. Richmond, Virginia, started a similar settlement shortly and California followed.

Specialization was the next innovation, and we behold the School Nurse, Tuberculosis Nurse, Baby Welfare Nurse and the Industrial Nurse. The first division of Child Hygiene was founded in 1908 in New York State. In 1912 the Federal Children's Bureau was founded.

Rural nursing as a specific variety, calls for varying methods. Westchester County in New York State pioneered in this. Connecticut followed; then the needy mountain districts of North Carolina.

The Metropolitan Life Insurance Company, operating in the United States and Canada, initiated a unique service among its policy holders and has done the greatest possible service in popularizing the Public Health Nurse. It was a momentous thing that Mr. William Rathbone started in Liverpool.

The nineteenth century was well opened when it was found that organization was essential, and the National Organization for Public Health Nursing was consummated in 1912.

The story of the War and the Nurse is succinctly retold by Miss Brainard, and she shows what an impetus that cataclysm gave to the entire cause. In England the whole nursing movement was almost revolutionized. A Ministry of Health was started with its important bearing on the nursing profession, noticeably affecting state registration, a protection that had long been sought. The war had a lesser effect in America, but greatly strengthened certain fundamental considerations; noticeably, (1) it centered interest in nurses' education, and (2) pay service became a prominent feature, lifting it thus from charity and philanthropy, and supplying to others than the poor and destitute a much-needed aid for which the privileged were eager to pay.

To-day sees a new trend. Great numbers of nurses are being attached to state and city health departments, thus increasing the use of taxes and the public funds. City, county, state and federal governments are seeking the nurse's service. School, factory, shop and street are her "beat." The entire community is in her hand.

Miss Brainard has done a great service in thus collecting the history of a great movement, and the book can be cordially recommended as concise and edifying reading. Mary Riggs Noble.

THE TREATMENT OF FRACTURES, With Notes Upon a Few Common Dislocations. By Charles Locke Scudder, M.D. Ninth Edition Revised. Philadelphia: W. B. Saunders Co.

The ninth edition of Scudder's well-known work has been extensively revised, though the general arrangement of the discussion has been, in the main, preserved. There is still a tendency to touch rather lightly upon, or omit, the less common fractures of the carpus and tarsus. Of fractures near the ankle, though a brief summary of Ashhurst's classification is given, only what is designated as Potts' fracture is discussed, and the pathology underlying both Colles' and Potts' deformity is incomplete in detail. Fractures in and about the ankle, if unrecognized, may often lead to such serious impairment of function that they would seem to deserve a more complete consideration. The arrangement of the paragraphs on tetanus, delayed union and nonunion, and Carrell's treatment of open and infected fractures, tucked in with the consideration of forearm and leg fractures respectively, would rather seem to have come upon a casual resting place.

However, the consideration of the more common fractures, particularly those of the clavicle, humerus and femur, is exceptionally complete and excellent. The details of the sections on methods of examination and treatment are especially noteworthy. Suspension and traction treatment, with numerous simple and detailed explanatory illustrations, and Hawley's ingenious splints, is well portrayed. In this regard, Scudder's work deserves a prominent place upon our "fracture" shelves. Whitman's abduction treatment in fractures of the neck of the femur is strongly advocated and especially well described and illustrated.

An excellent chapter on the use of plaster of Paris and a description of the proper method of leverage in overcoming overriding and shortening in open reduction of fractures are noteworthy high lights.

This new edition has incorporated most excellently the newer methods of fracture treatment but, like the previous editions, seems to specialize in the thorough and careful description of examination and treatment in the common and most frequently met fractures.

W. L. Estes, Jr.

CLINICAL DIAGNOSIS AND SYMPTOMS. By Alfred Martinet, M.D., Paris, France. Authorized English translation from the third revised and enlarged edition by Louis T. de M. Sajous, B.S., M.D., Philadelphia, with 895 text engravings and several full page color prints, complete in two royal octavo volumes. Published by F. A. Davis Company, Philadelphia, Pa. Price $14.00.

Volume I: The plan followed in this work is one of marked simplicity and one well adapted to the requirements of every day medical practice. It is divided into Part One, which deals with General Considerations on Diagnosis, and Part Two, Special Medical Diagnostic Procedures. This includes Examination of the Digestive Tract. In this connection the reviewer feels that the writers have omitted pointing out the advantages of the use of the duodenal tube and have not presented the advantages or disadvantages of the use of the fractional method of gastric analysis. This is to be regretted in such an excellent edition.

Part Two also includes Examination of the Respiratory Tract, including the upper respiratory passages and the intrathoracic respiratory tract. In this connection, the author has not made the subject of râles as clear as he should have done.

Part Two also includes Examination of the Circulatory System, Examination of the Peripheral Circulatory System and the Functional Diseases of Circulation, also Examination of the Blood.

In the author's description of Pericarditis he has unfortunately omitted calling attention to the fact that in pericarditis with a fusion the most marked physical signs may be elicited in the posterior aspect of the chest, resembling consolidation of the lung and ofttimes taken for the latter.

The writer then takes up the Examination of the Genito-Urinary Tract, Examination of the Urine, Examination of the Nervous System, Examination of the Skin and its Appendages. He then discusses General Technical Procedures in Medicine, including Parasitology, Bacteriology and Spectroscopic Examination, also, Clinical Mensuration. The final chapter is on Systematical Examination.

The reviewer derived much benefit from the reading of this volume and on account of its completeness, with the few exceptions noted, it will be of great service to any general practitioner in medicine or specialist as it includes so much that is worth while. The work is neatly prepared, illustrations are very clear and helpful and the charts are very illuminating.

Volume II: This volume is devoted to the Analysis of Symptoms. Symptoms are discussed in alphabetical order.

He first takes up the subject of Albuminuria, giving its definition and then discussing in what conditions you are likely to find albuminuria. Alopecia is the next in order, which is nicely described, and this subject is followed by Anemia. He uses a diagram to illustrate the types of anemia, which is helpful. He divides the anemias into the spoliatory type, the toxic infectious type, autotoxic type, insufficiency of the hematopoietic functions and the cryptogenic type.

Next he discusses Aphonia and Hoarseness, using many useful and helpful diagrams for this condition. Next in order is Arhythmia. Under this subject he discusses the normal heart rhythm, extrasystoles (premature beats), paroxysmal tachycardia, respiratory (sinus) arhythmia, auriculoventricular dissociation (heart block), alternation of the pulse and perpetual arhythmia (auricular fibrillation). This is also illustrated with many cardiograms and sphygmograms which are very helpful.

The next subject is Ascites. This is also demonstrated by a very interesting and valuable table. He next treats Asthenia and Fatigue, Chills, Coma, Constipation, Convulsions, Cough, Delirium and Delusions, Diarrhea and Dyspepsia. This is a well written portion as it illustrates how many things are often taken for these symptoms which have an organic basis elsewhere.

This is then followed by Dyspnea, which is very well described, then Edema, Epigastric Pain, Epistaxis and then Exanthemata. This subject is very nicely outlined by the use of charts and of colored plates in illustrating syphilis. His differential diagnosis is very complete and the colored plates illustrating the common types of infectious exanthemata are very pretty. This is followed by Expectoration, and under this description the semeiology of the sputum is nicely arranged.

The next is Disorders of the Eyes which is discussed in a very systematic and clear manner. This is followed by Fainting, Fever, Frequent Pulse, Genital Ulcerations, in which he summarizes the different types in a very helpful manner. He then discusses Glandular Enlargements, Glycosuria, Headache, Hematemesis, Hematuria. In these conditions he has also splendidly outlined and described them by charts.

He then discusses Hemiplegia, Hemoptysis, then Hiccough followed by High Blood-Pressure. This is nicely presented and is helpful.

This subject is followed by Pain in the Left Hypochondrium, Pain in the Right Hypochondrium, Pain in the Left Iliac Fossa and Pain in the Right Iliac Fossa. This is very cleverly presented and is illustrated with many useful illustrations and diagrams.

The next subject treated is Insomnia, then Itching, Jaundice, Joint Pains, Loss of Weight, Low Blood-Pressure, Pain in the Lower Extremities. These are well presented. Lumbar Pain is next followed by Swellings in the Neck, Nervousness, Obesity, Oliguria, Pain in the Side, Plethora, Polyuria, Precordial Pain, Morbid Sleep, Slow Pulse, Sore Throat, Tinnitus Aurium, Diagnostic Features Relating to the Tongue, Tremor, Pain in the Upper Extremities, Vertigo, Vomiting, Index of the Principal Clinical Signs.

Much valuable information and diagnostic help will be obtained by frequent use of this volume. The Index of the Principal Clinical Signs is a very useful and practical addition to this type of work.

The reviewer recommends these two volumes to any physician and assures him that they will be of valuable assistance in his work. F. F. D. R.

GENERAL MEDICINE of The Practical Medicine Series 1922, Volume I. Chicago: The Year Book Publishers. Price $3.00.

Barring a number of typographical errors I find it a splendid résumé and digest of last year's literature published on internal medicine. While it is of special value to the general practitioner, it is also of value to the internist and to medical men who are giving particular attention to special departments of internal medicine. The various editors are to be congratulated in presenting in such a small compass so much of the world literature that is up-to-date on internal medicine.
G. E. H.

SYMPTOMS OF VISCERAL DISEASE, SECOND EDITION, by Francis Marion Pottenger, A.M., M.D., LL.D., F.A.C.P. Published by C. V. Mosby Company, St. Louis, Mo.

The second edition of this work has corrected many errors of commission and omission. It will be difficult for the author to persuade the medical profession to conform to his recommended nomenclature. Head's classification still continues as the foundation for study of pain and explanation of reflexes. On page 147 the studied effort to explain the reflex pain in irritation of the appendix will not be generally accepted. In some places the wording of the subject matter is not smooth and could be improved upon. I feel, however, that the book is worth reading but requires much study in order to catch the author's viewpoint. A. C. M.

THE MEDICAL CLINICS OF NORTH AMERICA. July, 1922. St. Louis Number. Vol. 6, No. 1. Philadelphia and London: W. B. Saunders Company.

This volume of the Clinics contains a smaller number of articles than usual, but these maintain the usual standard of value and interest. Titles and authors follow: Endocrine Adiposity, by Dr. W. Engelbach; Pubertas Præcox, by Dr. J. L. Tierney; Pernicious Anemia, by Dr. L. H. Hempelmann; The Relationship of Syphilis to the Appearance of Symptoms of Disorder of the Central Nervous System, by Dr. F. M. Barnes; Neurologic Cases, by Dr. S. I. Schwab; Dyspepsia, by Dr. H. W. Soper; Lactic Acid Milk (Whole Buttermilk) in Infant Feeding, by Dr. B. S. Veeder; Chronic Digestive Insufficiency (Celiac Disease), by Dr. W. McK. Marriott; Erythremia (Acrodynia) in Infants, by Dr. J. Zahorsky; Acute Intermittent Cardiac Decompensation, by Dr. E. S. Smith; Tumors of the Mediastinum, by Dr. L. Sale; Bronchopulmonary Lithiasis, Mediastinal Tumor, by Dr. J. C. Lyter; Bacteriologic Clinic —Diagnostic Methods, by Dr. R. A. Kinsella.
A. A. E.

TEXTBOOK OF PEDIATRICS, edited by Professor E. Feer, Director of the University Children's Clinic, Zurich. Translated and edited by Julius Parker Sedgwick, B.S., M.D., Professor of Pediatrics, University of Minnesota Medical School, and Carl Ahrendt Scherer, M.D., F.A.C.P., Duluth, Minnesota. First edition in English; 262 illustrations. Philadelphia and London: J. B. Lippincott Company, 1922. Price $8.50.

The review of a book of this kind by one who has had the privilege and the pleasure of dealing with children for more than thirty-three years is a pleasure and a source of recreation.

The writer introduces you to the peculiar anatomical and physiological differences between the adult and the newborn child, calling attention to the variance in blood pressure, circulation, respiration and nutrition, and carries you along with tables and illustrations to care for and produce a healthy, normal and happy child.

In the chapter on Symptomatology and Technic of Examination the author carries you through the fertile field of the child's history from its conception through its intra-uterine life, its birth, its development, its feeding, its environment and its general welfare.

Having taken note of these as gathered from the fond mother you are then ready to verify them by your observation of the child under study. The chapter on Prophylaxis and Therapy is a masterpiece in child care, for we are now living in times that require the physician to teach his clientele the ways of prevention, for it is believed that many children are taken by the "grim reaper" because some one has blundered, some one has been careless and some one has cost a little life. Let the author impress you with his statements and facts gathered from his own as well as from the experience of the men of our profession who have worked along these lines over a period of many years.

The diseases of the newborn child are many and varied, and the author in this chapter is interesting and instructive and entertains you while you read and gives you heaps of information to apply to the little fellow who has been placed in your hands for you to say whether he shall stay here or go "yonder." A careful reading or study of this important chapter added to your storehouse of knowledge will do much to help you in the care and treatment of the little ones.

When you turn over to the chapter on Blood and Blood-Forming Organs, you are at once impressed by the clearness and the earnestness of the author in setting forth the necessity of close observation of the child. As you turn on through, you come to the chapter on Disease of the Digestive System, and you will find just the formula for preparing the food for the baby that has been deprived of its mother's feeding, and bring to it that comfort and peace that makes the care of the baby a pleasure.

The author, all through the book, has endeavored to produce a pleasing and helpful work for the busy practitioner, and all who deal with the subjects of his work should have this book. J. B. F. W.

ALBERT ABRAMS, A.M., M.D., LL.D., F.R.M.S.

Dr. Albert Abrams, of San Francisco, is the latest rocket to blaze a somewhat polychromatic course across the firmament of pseudo-medicine. The stick will fall, anon. In the field of diagnosis Dr. Abrams claims to have evolved a system of abdominal percussion, practiced in connection with certain electrical apparatus he has had made, from which he derives what he is pleased to term the "Electronic Reactions of Abrams" (abbreviated ERA). By means of this system it is claimed that Abrams "can diagnose the sex, race and disease" of a patient he has never seen. All that he needs is a sample of blood from the individual. A few drops of blood, from a person who must be facing west but who may be a thousand miles or more away, are put on apiece of paper and the paper is placed in what Abrams calls his "Dynamizer." This is connected with his "Rheostatic Dynamizer," from which, in turn, wires go to the "Vibratory Rate Rheostat" that is connected with the "Measuring Rheostat"! From the "Measuring Rheostat" comes a wire at the end of which is an electrode which is pressed to the forehead of a healthy individual (the "subject") whose abdomen is being percussed. The "subject" must face west, also.

The whole arrangement is reminiscent of one of Goldberg's inimitable cartoons, depicting a fearful and wonderful device for waking up in the morning or committing suicide or something equally interesting. The nub of the whole matter is, however, that the alleged diagnosis is made by mapping out various areas of resonance and dulness in the "subject" who is being percussed. Dr. Abrams claims to be able to tell by this means whether the individual whose blood is being "tested" is suffering from syphilis, sarcoma, carcinoma, typhoid fever, malaria, gonorrhea or tuberculosis and, if so suffering, where the diseased area is located! He can also diagnose pregnancy by the same method!!

So skilful has Dr. Abrams become in his diagnoses that he can substitute for the drop of blood, the *autograph* of an individual, living or dead, and subject it to his tests and declare whether or not the individual is or was a sufferer from syphilis, etc. He has, in fact, reported the results of subjecting the autograph of Samuel Pepys to his "electronic reactions" and finding that this famous diarist suffered from congenital syphilis; of finding the same for Henry Wadsworth Longfellow and also for Edgar Allen Poe and, in the case of the latter, adding that he also got the "reaction of dipsomania." The autograph (written in 1775) of that stern old moralist, Dr. Samuel Johnson, gave the "reaction" for acquired syphilis and tuberculosis.

Nor is this all. Dr. Abrams now announces that by his "electronic reactions" he can determine the religion of an individual and, in the latest issue (September, 1922) of his house-organ, *Physico-Clinical Medicine*, he maps out the areas of dulness for (1) Catholic, (2) Methodist, (3) Seventh Day Adventists, (4) Theosophist, (5) Protestant, (6) Jew. Just why the area of dulness of a "Methodist" should be in the left lower quadrant of the abdomen while the area of dulness of a "Protestant" is in the right lower quadrant, is not quite clear. Neither is it explained why the Jew should have such a much larger area of dulness than the Christian. These points will, doubtless, be cleared up later.

In the field of treatment Albert Abrams claims equal marvels. He has discovered that all drugs that are specific in the treatment of disease have a definite vibration rate. He has, therefore, devised another instrument which he calls the "Oscilloclast." This is capable, so it is claimed, of producing vibrations of various rapidities. Instead of using a drug, one starts the "Oscilloclast" going, moves the indicator to the number corresponding to the vibration rate of the indicated drug and applies the instrument to the sufferer, who then gets, it is alleged, the therapeutic action of the drug in question. The "Oscilloclast" is not for sale; it can be leased, to those who are willing to pay the price and sign a contract that they will not open it!

It has been suggested that the American Medical Association conduct a scientific investigation of Abrams' claims. As has been stated elsewhere, Abrams was given an opportunity a few years ago to subject his theories to scientific test—and he rejected the opportunity. To make such an investigation to-day would be to dignify that which has become preposterous on its face. Nor is it conceivable that an adverse report from a group of scientific men would serve any good purpose. Certainly it would make no difference to the deluded, ignorant or itching palms in the profession who are "enjoying incomes of from $1,000 to $2,000 a week" from the use of the Abrams paraphernalia; while Abrams' own retort would doubtless be that the diagnostic methods of scientific medicine are too crude to be used to check his ultra-refined "electronic reactions." In fact, in warning his disciples not to submit to blood tests, Abrams declared recently (September, 1922) that "the ERA cannot fully accord with the conventional diagnoses." The American Medical Association will take up Abrams' fantastic vagaries for serious investigation when the American Astronomical Society appoints a committee to determine the truth or falsity of the theory of Voliva, head of the Zionites, that the earth is flat.—*From the A. M. A.*

ABRAMS' DIVINING ROD: THE APOTHEOSIS OF BUNCOMBE

"Oil Locating Machine Aim of Dr. Abrams. Mysterious Device To Be Exhibited Soon." Thus a Los Angeles paper for February 12th heads, in large and black type, an article detailing the alleged claim of Albert Abrams[11] of San Francisco, that he has about perfected a machine that will locate the subterranean position of oil. The claim may not be as new as it seems. In his book "New Concepts in Diagnosis and Treatment," published six years ago, Abrams declared that the divining rod is not a superstition and does not belong to occultism "but it entitled to consideration as a scientific fact." In the same book Abrams declared that with his instrument, the "Sphygmobiometer," "it is now possible to demonstrate the wave-metric index of water, oil and minerals." He continues further:

> Thus subterranean determination of the foregoing as a prerogative of the specially gifted must be relegated to scientific reality. By aid of the apparatus in question, one may even venture further and ascertain quantity and depth.

Abrams was vague—as usual—regarding the details of this wonder and to the paragraph just quoted he appended the footnote: "It is impossible to describe the author's methods. They demand personal demonstration. * * *." But why should one express astonishment regarding this particular claim of Abrams? To the man who can tell from the autograph of old Samuel Pepys that the famous diarist suffered from congenital syphilis, surely the locating oil and mineral deposits should be a mere bagatelle. To the man who, from a drop of dried blood, can tell whether the owner of the sanguineous fluid is a Scotch Presbyterian, a Hard-shell Baptist, a Seventh Day Adventist, a Knight of Columbus or a member of the B'nai B'rith, the development of a divining rod is mere child's play. Seriously, however, the disciples of Abrams will needs be more careful in the exploitation of an "oil locating" machine than in their present stunts of diagnosis and treatment of human ailments. Abrams' followers are diagnosing syphilis, cancer tuberculosis and many other serious diseases in persons not suffering from those diseases and they "get away with it." When the medical profession in the interest of the public protests the findings, the reply is: Your methods of diagnosis are so crude and insensitive that you are unable

(Concluded on page xiv)

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ABRAMS' DIVINING ROD

(Concluded from page 500)

to find what we have found. This alibi will not work in the less dangerous field of locating oil and minerals. Because of the public's ignorance of the human body and its processes it permits the grossest frauds to be perpetrated when done in the name of the healing art; it resents most savagely, however, chicanery and humbug when property rights are involved. One thing must be said for the Abrams cult: Whatever skepticism we may have of Abrams' accomplishments, he must be given credit for the discovery of the modern Philosopher's Stone, with which his followers transform the dross of credulity and hopefulness into shining shekels of gold.—*Jour. A. M. A.*, March 3, 1923.

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[11] A reprint of the Abrams vagaries will be sent on receipt of four cents in stamps.

WHAT WE GET WHEN WE SMOKE

One of the substances abundantly present in tobacco smoke is carbon monoxid, well known as the lethal agent of illuminating gas and of the exhaust gas of motors, which has had so many victims in recent years. Carbon monoxid is not directly poisonous, but displaces oxygen from hemoglobin, for the red cells have 225 times as great an affinity for this gas as for oxygen. Baumberger[6] has found that tobacco smoke may have from 7.2 to 25 parts of carbon monoxid in 10,000 parts of air, a concentration which Henderson found capable of causing serious symptoms if inhaled for more than an hour. But persons never take in undiluted smoke—the heartiest cigaret fiends and the most resolute pipe smokers always take many breaths of fersh air between puffs. It is estimated that if a person should smoke continuously for one hour, inhaling the smoke five times a minute, there might occur as high as 22 per cent saturation of the hemoglobin by carbon monoxid, a concentration sufficient to produce headache and perhaps an oxygen shortage during activity; but this figure is undoubtedly far above what smokers do actually accomplish. Perhaps 10 per cent is more nearly the maximum reached in smoking, a figure that has not been found ordinarily to produce symptoms.

Formerly the statement was current that the chief toxic material in tobacco smoke is pyridin, derived by decomposition of nicotin; but later studies agree in indicating that the nicotin is the chief active agent, tobacco smoke exerting much the same physiologic effects as nicotin in corresponding concentrations.[7] By direct analysis, Baumberger found that cigaret smoke contains between 14 and 33 per cent of the nicotin present in the tobacco smoked. Cigarets weigh about 1 gm. apiece, and about 80 per cent of the tobacco io smoked, so that the nicotin in the puffed smoke amounts to about 5 mg. for each cigaret. Of this, about 67 per cent is absorbed if the smoke is merely taken into the mouth, but 88 per cent is absorbed if the smoke is inhaled into the lungs. How much of this reaches the blood depends chiefly on how much is lost in saliva, the drooling of the novitiate being an important protective measure, since from 3 to 5 mg. of nicotin dissolved in water, taken within half an hour, may cause severe symptoms in nonsmokers, whereas habitual smokers can endure twice as much.

These figures show that an unventilated room 10 feet square and ten feet high, occupied by ten men all smoking cigarets to the best of their ability for an

(Concluded on page xvi)

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—*American Medicine, September, 1922.*

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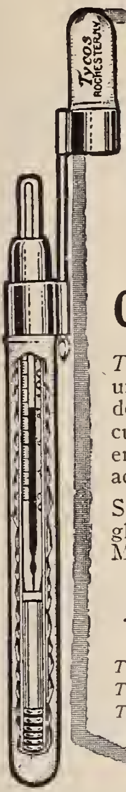

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WHAT WE GET WHEN WE SMOKE

(Concluded from page xiv)

hour, would come to have an air containing about two parts of carbon monoxid and enough nicotin to furnish 2.6 mg. an hour to the person compelled to breathe it. While these are not large amounts in figures, it is certain that any nonsmokers, and many smokers, in such an environment would have a headache, which is ascribable to the increased intracranial pressure that is produced by both the nicotin and the decreased oxygen in the blood. If our hardened cigaret smoker were to puff away steadily for an hour he might absorb as much as 36 mg. of nicotin if he inhaled, and 27.5 if he only puffed. These are amounts that would undoubtedly produce marked effects even on the habituated, but there is at least the consolation that the lethal dose is 500 mg. taken at one time. However, the smoker gets much besides carbon monoxid and nicotin, for the solids of cigaret smoke weigh about 10 per cent of the tobacco burned, or about 80 mg. for each cigaret, and all the things it may contain besides the aforementioned are not known; but the experimental evidence indicates that nicotin and carbon monoxid account for most if not all the observed effects.

It is to be considered that these experiments were carried out with cigarets, for the observations of Lee indicate that tobacco burned in cigarets yields much less nicotin, and presumably less carbon monoxid, in the smoke than when burned in cigars or pipes. For example, a Manila cigar and a cigaret of Virginia tobacco were so burned that the same amount of tobacco was consumed in equal time, and the effect of the products of the combustion determined; it was found that although the cigaret tobacco used contained nearly twice as much nicotin as the cigar tobacco, the smoke of the latter was twice as toxic as the cigaret smoke. The explanation for this is that during the slow combustion of a cigar, as in ordinary smoking, immediately behind the point of combustion is an area in which the water and other volatile substances condense; during the act of smoking, the hot gases pass through this moist area and volatilize the more volatile principles of the tobacco, of which nicotin is one. Therefore the smaller the moist, hot area behind the point of combustion, and the more rapid and complete the combustion, the less likely is the smoke to contain volatile toxic bodies; hence a cigaret or a slender cigar will yield fewer of these products than a thick cigar, and many smokers can testify that a thick, "fat" cigar has much more effect than a long, slender cigar of similar tobacco. The unpleasant effects that the unaccustomed smoker experiences on relighting a half-finished cigar or pipe are explained on the same basis.—*Jour. A. M. A.*, March 3, 1922.

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6. Baumberger, J. P.: J. Pharmacol. & Exper. Therap. **21**: 23 (Feb.) 1923.

7. Lee, W. E.: Quart. J. Physiol. **1**: 335, 1908. Von Leeuwen, W. S.: Arch. f. exper. Path. u. Pharmakol. **84**: 283, 1918.

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ADDRESS

SPECIALISM AND COOPERATION*

GEORGE E. DE SCHWEINITZ, M.D.
PHILADELPHIA, PA.

Expressing my high appreciation of the courtesy extended in the receipt of an invitation to address the members of the Medical Society of the State of Delaware, an invitation which I have gladly accepted, I am fully aware that although some of those present are interested in ophthalmology, the majority have tilled the wider fields of general medicine and surgery. Therefore it becomes evident that the substance of this address should endeavor to concern itself with matters which are of value both to the general practitioner and to the physician who is concerned with special lines of practice.

Everywhere in the world progress is brought about by increasing specialization and coöperation. Almost a quarter of a century ago, a very distinguished London surgeon wrote somewhat as follows: "Specialism there must be. In the evolution of thought, in the increasing differentiation of social and economic functions, and in the consequent subdivision of labor, the growth of specialism is inevitable and, indeed, necessary. The increase of knowledge, the elaboration of the means and methods of investigation, the more minute *differentia* of disease and of diagnosis, the complexity and potency for good or for evil, of modern therapeutics, whether pharmaceutical or surgical, must eventuate in specialism of knowledge and specialism of practice. This tendency is observable in the whole world of thought and opinion—in philosophy as well as in physiology, in politics and economics, in architecture and in engineering, no less than in medicine and surgery. But it behooves every enlightened member of the medical profession to take care that our specialization shall be the legitimate and reasoned outcome of the growth of knowledge."

This is a judicial and fair statement of the *raison d'etre* of specialism in our profession, but granting this, we must not forget, as has been previously stated, that if progress is to exist, increasing specialization must go hand in hand with coöperation. In other words, it behooves us, whether we be general or special practitioners, in the study of our cases to strive for integration of what has been left imperfect.

At the present time, in order to secure cooperation in medical and surgical work, group practice and group clinics have come into existence and are spreading widely. Certain objections have arisen with respect to this technic, although everyone will admit that advantages also arise, provided the kind of coöperative work interpreted in group practice is properly performed. It is not the purpose of the present paper to discuss this matter, nor to recite the arguments for and against it, but it is the purpose of the essay to point out, what of course we all know, that for years physicians, when the interests of their patients demanded it, have turned to group practice in the sense that from the laboratory standpoint, from the special standpoint, and from the specialized general standpoint, coöperation has been secured by calling on expert advice in cases of difficult diagnosis.

In my early medical career two incidents made a lasting impression on me. Called in the night to the bedside of a child of three, brought into the Children's Hospital, where I was serving my first interneship, I found the little patient prostrated, cyanotic, with a high fever and marked respiratory dyspnea. I made what I believed to be a thorough examination, but failed to find a satisfactory cause of the condition. Sending for my chief, he listened to my report, and then without a word, thrust his finger into the child's throat and detected far up in the posterior pharynx a bulging spot indicating a retropharyngeal abscess. It was promptly opened, and all the symptoms speedily subsided. Turning to me with a kindly smile, he said: "Doctors fail not so much because they don't know, but because they don't examine."

While serving on the late Dr. Weir Mitchell's staff, at a somewhat later period in my career,

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*Address delivered before the Medical Society of Delaware, Dover, October 10, 1922.

I listened to his exceedingly accurate cross-examination of a patient with obscure symptoms; watched him as he carefully reviewed the history, the clinical reports and the laboratory findings. Anxiously the sick man leaned forward, waiting for the verdict. "I know," said Dr. Mitchell, "exactly what is the matter with you. Alone I cannot cure you, but I know the man, or the men, with whose help I can."

The very foundation of successful therapeutic effort resides in painstaking clinical examination, history record, exact search and coöperation, not alone with the laboratory and its methods, but with "the man who knows," with the man who is especially trained to be the foe of the cause from which the morbid state is evolved. More often it requires more than one man "who knows" to reach a successful outcome. It requires work, coöperative work, each practitioner furnishing his quota until the page is complete. The time has long passed when it is possible for any one man to be practically familiar with all the problems which must be solved in the management of a difficult case, and I have never in a rather long career known any instance where properly secured help, properly given, has failed to create an additional bond of confidence between the patient and his physician.

Although for more than a century physicians have observed a relation between areas of local sepsis and somatic as well as organ-maladies, notably those in the teeth, the so-called doctrine of focal infections, in this country at least, did not establish its firm hold on the profession until after the delivery of the Lane Lectures by Dr. Frank Billings about twenty years ago.

This doctrine has become almost a trite subject, not to say a household topic, and yet certain references cannot be avoided, even though they sound like, or perhaps are, platitudes.

Studies and observations in this respect have been rich in the importance of their results, and have demonstrated that the elimination of areas of focal sepsis is often followed by well-nigh startling recoveries in many conditions previously poorly understood and badly managed.

Certain facts have been established, and one of great importance is that the obligations of modern practice demand that an inflammation or lesion, whether, for example, it resides in a joint, in a heart valve, in a tissue of the eye, in the muscles, or in the glomeruli of the kidney, shall be studied, not merely in relation to its local manifestations, or, indeed, with respect to constitutional difficulties, but with an endeavor to ascertain the origin of the toxemia of which it may be the interpretation. In other words, the local lesion, in heart, joint, eye, kidney or elsewhere, is not an independent disease, but a complication.

In practical work we are not greatly concerned whether, given a focal infection, the infecting materials are the bacteria themselves, or their products such as toxins or endotoxins; nor whether the focus of infection is merely the port of entrance of bacteria, or whether it is an area with conditions favorable for the bacterial parasites to acquire properties which give them a wide range of affinities for various structures. We may be content to realize that the bacterial elements reach and locate in certain tissues, either because they have acquired a special affinity for them and a good soil for growth, or because the resistance of the parts is reduced by some other agency, and the localization of the germs is favored.

The agency which reduces resistance in these circumstances, there is reason to believe, is an "injury" which puts out of operation local protective forces, and this injury may be chemical, physical, or depend upon a chronic infection. The subject of a remnant of gonorrhea in the posterior urethra (it may be years after its incidence) begets an arthritis after a prolonged exercise, or an iritis after excessive reading. This is an example of a physical injury: A person with chronic syphilis, or other chronic infection, may acquire, let us say, a uveitis, may resist the usual remedies, but yield to them after the elimination of an abscessed tooth, or infected tonsils. This is an example of the coöperation of a syphilitic and secondary (pyogenic) infection. It is quite possible that a similar coöperation between gout, diabetes and hypothyroidism and pyogenic infection exists; the metabolic products furnish a chemical injury which reduces the resistance in an area against which the bacteria from a focal area launch a successful attack.

Finally, it must not be forgotten that often more than one focus of infection is present, i. e., more than one depot is stocked with the materials of bacterial warfare, and hence the elimination of one septic area is not sufficient.

Because the study of focal infections has markedly improved our diagnostic methods and therapeutic measures, it is perhaps not unnatural that at times there have developed over-enthusiasm and optimism. There is no doubt, if I may quote from a previous paper, that many teeth, for instance, have been needlessly sacrificed, but this is equally true of many appendices, many foreskins, many tonsils—the list is a long one. But he is just as wrong who disdainfully disregards examinations along these lines because, forsooth, he chooses to regard the whole matter as "a fad," as he is who suspects every tooth, for example, and extracts too many, or condemns all tonsils and "cuts them out" too frequently, or in the presence of each optic neuritis accuses the ethmoid or sphenoid without adequate investigations, and indulges in ill-considered explorations, to the detriment of the neighboring meninges, which are easily insulted. Evidently there is a safe and sound pathway which opens up as the result of conscientious investigation, and neither unreasoning conservation nor injudicious enthusiasm of ill-advised activity lead to it.

Passing from these generalities, I submit a few examples of the value of what I have ventured to call specialism and coöperation.

A married woman, aged 35, three months after a severe influenza, developed a right-sided, diffuse, but relapsing keratitis, the lesions of which did not penetrate further than just below Bowman's membrane. The ophthalmologist consulted made the usual examinations, and all were negative, serological and t.b. tests included, except that infected tonsils were found, and several suspicious teeth. Tonsils and teeth were removed, and proper local treatment instituted. But relapses continued during the following year, and she sought additional advice.

The patient was under-weight, nervous, and naturally depressed. An internist was consulted, who confirmed the previously reported examinations, but also found some intestinal stasis and a "poor digestion." Struck by the patient's statement that she was always better if she could rest and be kept from the worry of ordinary life activities, her family physician in her own far-off home was consulted by letter, and he reported that in years gone by an ordinary rest-cure had been of great benefit to her. This, on request, was instituted, the intestinal stasis corrected, also the diet. In six weeks the patient had gained sixteen pounds; the eye was well.

Now the course of events would seem to be this: A keratitis due to an infection, probably from tonsil or tooth, or both, the local resistance being reduced by a general asthenia, recrudescent as the result of influenza; elimination of the focal infections, dental and tonsillar, and the local ocular treatment necessary, but not sufficient; when the asthenia yielded to the rest-cure, and the restoration of normal intestinal functions (also a source of infection), the arch was completed, and the keystone of the arch was the general practitioner. Specialist and practitioner coöperated, each needing the other, and in six weeks the job was completed, which for a year had remained imperfect.

A man, aged 35, free from syphilis, tuberculosis, cardiovascular and renal disease, and without evidence of intestinal disturbance, but who at twelve years of age had double mastoiditis, and since then has been quite deaf, and has had a more or less constant otorrhea, had between May, 1918, and February, 1922, five attacks of iridocyclitis, two in the right eye and three in the left. Three of the attacks were severe, one mild, antedating by a month the fifth, or exceedingly active relapse. He also had vague rheumatic pains, chiefly in the finger joints.

During the third attack (October, 1919) he came under observation, and the usual treatment locally was instituted, together with aspirin internally, elimination by cabinet sweats, and later iodids, and an autogenous vaccine cultivated from the pus from the ear. The teeth had been put in order, and there was a difference of opinion as to the tonsils, one otolaryngologist demanding their removal and another maintaining their innocence. Appendectomy (pus found) after this October, 1919, attack had entirely subsided. Eye quiescent until the following April (1921), when a sharp relapse (left eye) occurred. The treatment before described was instituted, but without the previous happy result; hence, after vigorous insistence, tonsils were removed, and found distinctly, but not grossly, infected. Prompt subsidence, first of the finger-rheumatism, and then of the iridocyclitis. Freedom from all trouble for seven months, then a mild attack (January, 1921) which lessened under same treatment (aspirin, sweats, but no vaccine), and the usual local measures, but which, in spite of this, one month later, blossomed out into a violent relapse (February, 1922). A necrotic spot in the jaw was found and eliminated, and after conference with the family physician, the patient was sent to one of the well-known Hot Springs, and underwent a partial cure (baths and diet), with very prompt entire subsidence of the iridocyclitis. Since then, more than half a year ago, there has been no relapse. Whether one shall follow remains to be seen, as once before there was an interval of seven months between attacks.

This case illustrates several points of interest: First, a number of areas of focal infection; suppurating otitis media, infected appendix, dental sepsis and bad tonsils, possibly but not certainly, a moderate intestinal sepsis or indigestion.

Second: Two interpretations of these focal infections—moderate but distinct finger-rheumatism (digital arthritic pains) and relapsing iridocyclitis.

Third: A persisting otorrhea (still existent) which, not naturally, was at first mainly, if not entirely, accused as the chief area of offence, but which subsequent events indicate was least of all concerned with the etiological relations.

Fourth: The well-known, but often disregarded, fact that tonsils, apparently healthy on superficial examination, may be infected in the deeper layers, and with their removal entire disappearance of the arthritic pain, and temporary quiescence of the iritis ensues.

Fifth: The fact, also well known, that elimination (diaphoresis) by cabinet sweats, is not, at least not always, as effectual as a Hot Springs cure, probably because in the latter general supervision is more easily and effectually possible, including diet regulation. Evidently in this case the coöperation of dental, otolaryngologic, and even general surgical treatment was required, but again a careful association of general medical study was in ultimate result the needed ally. The effect of a multiplicity of focal areas is demonstrated.

There is a well-known ocular disease, called fugacious periodic episcleritis, originally named years ago by Jonathan Hutchinson, "hot eye," and in this country "vasomotor dilatation of the vessels," whose objective symptoms are areas of redness, congestion and episcleral thickening, whose character is relapsing, whose association is usually with gout and chronic rheumatism, and whose subjective manifestations are stinging, burning and itching, often intense.

But there is also a condition unattended with local changes in the episclera and conjunctiva, but with pronounced local discomfort, as before named—itching, burning and stinging, often especially located along the lid margins, the patients generally in apparently perfect health. Now such a manifestation is not an uncommon interpretation of eye-strain due to refractive error, or muscle imbalance, and hence their correction is an evident indication, and is, as it should be, put into practice. Surely there is no ophthalmologist in the room who has not encountered these cases, and equally surely none who has not been disappointed in that properly selected glasses utterly fail to relieve the symptoms. Many case histories could be detailed from the practice of any one of us, but it is unnecessary, as the type is sufficient as it has been described. This condition (exclusive of the refractive type) is often the direct result of what is loosely, or inaccurately, called the "uric acid diathesis" (lithemia), and disappears with surprising promptness when a suitable dietetic and medicinal regimen is ordered. The symptoms are analogous to the tingling in the feet and elsewhere noted in gouty subjects, so neatly described by Strabo many years ago, as the "lisping of the gout."

That certain relapsing types of episcleritis and conjuctivitis (nonbacterial) are associated with the ingestion of certain foodstuffs seems demonstrated, or at least apparently so, and with sufficient exactness to require, when other measures fail to bring relief, protein food tests, and should the skin react, such foods must be eliminated from the diet. Indeed, in one patient recently under observation (although other factors were not wanting), the marked skin reaction to wheat, followed by its exclusion from the diet list, resulted in rather surprising disappearance of a curious headache, associated with photopsies and conjugate deviation of the eyes to the left, helped but not cured by glasses. Such cases as these and the preceding ones are mentioned as fair examples of the need of general and special examinations, even where the local or other manifestations would seem to indicate eye-strain as the etiologic factor—other examples, in short, of what has been called coöperative work.

The mention of photopsies naturally leads to a reference to those types of hemicrania where the prodromes are ocular, to wit, scintillations, scintillating scotomas, visual hallucinations and hemianopsias, in short, migrains. Often, and indeed usually, greatly relieved by the correction of refractive errors and muscle defects, they rarely, if ever, are cured by treatment of the eye alone, and the search for other etiologic factors must be insistent—the gastro-intestinal tract, the common ones of focal infection, disturbed metabolism, as in gout, etc. This is so well known that the mention of it would be useless were it not for the fact that, as the forerunners are so often visual, corrections of visual defects, necessary as they are, only too frequently check a wider and more general search.

We must remember, also, that there are cases of scintillating scotomas and temporary hemianopsia which are not followed by the usual headache, or hemicrania, but by great mental depression. A case in evidence is this: A man, aged 57, too fat, with some peripheral arterial sclerosis and rather high systolic pressure, had for four years attacks of scintillating scotomas, followed by temporary half vision. After the first severe attack, there was freedom for two years, then for intervals of six months, then attacks came with greater frequency, once in two months, and finally once in every two weeks; always afterwards there was great mental depression and insomnia. Curiously enough, all treatment for years had been centered on the eye, and no search made for other causes. X-rays showed dental sepsis, and the evident indications of its elimination. The reduction of weight by dietetic measures, as well as the restoration of elevated systolic pressure to a reasonable standard were suggested and followed.

Finally, we should remember that there is a class of hemicrania cases, as well as a class of visual disturbances, such as has been described, where there seems little doubt that disturbances of the pituitary body functions must be accused, and surprisingly good results follow proper organotherapy. All such cases are excellent examples of the need that specialism should be linked with coöperative work from the diagnostic and therapeutic standpoints.

At this point a slight digression from the line of thought is permissible, or perhaps not a digression, viz., the care which must be exercised in the use of diagnostic injections of tuberculin. Two instances will suffice: A young man, the subject of that rather mysterious disease known as recurring retinal hemorrhages of adolescense, which, as you know, is probably in many instances dependent upon tuberculous toxins acting on retinal vessels, usually the veins, but which has also been attributed to faults in blood coagulability, to focal infections, and intestinal sepsis, and (they never escape) to disturbances of the endocrine glands, received a diagnostic injection (Mulford O T). It was followed by the most surprising local reaction (also a less severe general reaction), and unhappily, by an alarming explosion (there is no other word) of fresh intra-ocular hemorrhages.

A young woman, with a small group of choroidal tubercles along the superior temporal vessels of the right eye, received a similar injection, followed in the next forty-eight hours by an eruption of tubercles and small hemorrhages over a large area of the fundus. Fortunately, in both instances, long drawn out treatment resulted in a subsidence, in fact, a disappearance, of the lesions. In both cases the mistake was that a full diagnostic dose was administered in place of a gradual approach, short of unpleasant reaction. The warning which these cases reveal is evident.

Thus far the endeavor has been to illustrate the advantage of coöperation along the lines of examination which shall lead to satisfactory exhibition of therapeutic measures, also therapeutic caution. But one other point may be noted and illustrated in the following case history.

A young married woman, always in apparently good health, and in very pleasant surroundings, ten days prior to examination became conscious of sudden cloudiness of vision of the left eye, preceded by pain. Nothing definite was found by the attending ophthalmologist except a slight edema of the disc head. Serological tests, examinations for focal infection (save one abscessed tooth, which was removed), investigation of the paranasal sinuses, etc., were negative. Careful search by an accomplished internist revealed an unusually low blood-pressure, alteration of the breath sounds and narrowing of resonance above the clavicle, suggesting a t.b. influence, and x-ray examination of the chest gave some confirmatory, although not definite, evidence. Therefore the only "lead" appeared to be (it was a possibility, at least) incipient tuberculosis. When, however, a very searching history was taken, it was found, previously unnoted, or if noted deemed of no special importance, that the patient just prior to the advent of the ocular difficulty, and just at the conclusion of the menstrual epoch, had spent a day in vigorous work devoted to house-cleaning. Somewhat overheated, she had been exposed, or rather had purposely exposed herself to the cool of the evening, and was conscious of chilliness. Now it is a fact that a form of retrobulbar neuritis (which this appeared to be, although not typically) is sometimes analogous to facial (Bell's) palsy, caused by exposure, that is, a palsy exfrigore. Hence, the t.b. lead was abandoned, and an eliminative treatment instituted—vigorous diaphoresis, temple counter-irritation, diuresis and full doses of alteratives. In one month a cure was established.

This is a long road to reach a conclusion, but it seems worth traveling. In the absence of a searching clinical history, the point would have been missed and the wrong lead followed. How necessary it is, therefore, that our medical students shall be familiar in the best sense of that term with history-taking, and "wise it is," as Weir Mitchell once said, "that every fact in such a history, however minor its importance, should be regarded, as it may become the key to the whole situation."

In concluding, permit a few additional statements. Should the ophthalmologist, confronted with an iridocyclitis, for example, and uncertain as to its etiology, refer the patient to another for examination, special or general, it is incumbent upon him, if possible, as it usually is, to indicate the "lead," and thus avoid needless examination and equally needless expense. Should the first concentration on this suggested "lead" not bring satisfactory results, others must be followed. Elaboration of this thought is not necessary.

Should the general practitioner refer a patient to an ophthalmologist, for instance, he naturally and properly indicates the problem in which he wishes help, that is, are there ocular conditions to account for headache, nausea, gastric disorders, insomnia, excessive nervousness, etc., or symptoms suggesting increased intracranial pressure, or are there ocular indications of cardiovascular disease, renal affections, metabolic disturbances, etc.? But should the ophthalmologist in his routine work discover, let us say, an eye-ground lesion indicating a somatic malady, although the reference was for the correction of refractive error, and report the same, it is surely incumbent on the practitioner to investigate, and not to be offended. The reverse of this relationship is of course equally true. Each practitioner, or so-called specialist, must approach the problem in a spirit of coöperation, with the good of the patient as his paramount duty. If this rule is followed, neither will lose the respect of the other, and both will enhance the confidence of the patient. Coöperative medical work must be played fairly, and the success of it depends upon working "in perfect sympathy and uncontending equity."

ORIGINAL ARTICLES

SYMPOSIUM ON GOITER

Concluded

WHAT TYPES OF GOITER SHOULD RECEIVE MEDICAL TREATMENT?*

DONALD GUTHRIE, M.D.

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There is to-day much unnecessary surgery employed in the treatment of goiter. Many patients suffering from constitutional diseases but having at the same time non-toxic goiter are subjected to ill-advised operations after incomplete examinations and hasty diagnoses. It is against this practice that the writer wishes to object in the strongest terms.

While it is not within the scope of this paper to discuss the differential diagnosis of toxic goiter, may I urge that its symptomatology be emphasized so that the men in general practice may have a better understanding of it, for it is to them that the patient first comes for relief.

Anyone seeing in consultation many patients with goiter is impressed with the fact that the diagnosis of toxic goiter is often missed entirely and that valuable time is lost in treating the patient by medical measures when surgical intervention should have been instituted at an early date; also, that often in spite of a correct diagnosis the same valuable time is lost by employing medical instead of surgical treatment.

Simple endemic goiter, the goiter of adolescence or pregnancy, so common in goiter districts, should be looked upon as a deficiency disease, the hyperplasia in the gland being due to a lack of iodin in the organism.

Marine's work in Akron and other city schools proves conclusively that endemic goiter can be prevented by the simple administration of small amounts of iodin twice a year. In fact, he believes that if the prophylactic treatment were generally adopted endemic goiter and cretinism would disappear.

The administration of iodin will cause many of these hyperplasias to disappear. If they resist medical treatment the practical point is to make the patient and her mother understand that the enlargement is not serious or a dangerous thing, and that operation is not indicated. Occasionally, one sees an enormous diffuse simple goiter of long standing, which may be operated upon if the case resists medical treatment.

The patient ill with early pulmonary tuberculosis, an effort syndrome, a psychoneurotic state, a cardiac disease, or a paroxysmal tachycardia, and who has a simple goiter should be safeguarded from surgical advice by a most careful and painstaking study. This should include rest in bed under observation, with frequent pulse and temperature chartings, and a most careful physical and clinical examination with several basal metabolism tests. Much unnecessary thyroid surgery would be prevented if this plan could be carried out in every case.

Before leaving the subject of adolescent simple goiter, let me mention that occasionally we see well-pronounced exophthalmic goiter in the very young. Mayo operated upon a child of eight for exophthalmic goiter. The writer has had two cases—one in a girl of ten, and one of twelve years of age.

There is also much unwarranted unnecessary surgery employed in the treatment of colloid goiter. These goiters cause no form of intoxication, as a rule are symptomless, and should be treated by medical measures unless pressure symptoms are present or there is unsightly deformity. The large solitary colloid cystic goiter had best be treated by operation. It is very doubtful whether these goiters can be improved by medical treatment, and there is danger of tracheal pressure symptoms or malignant degeneration developing. Cancer of the thyroid which can be diagnosed clinically before operation, cannot in the writer's opinion be cured by operation. Any goiter which is found to be substernal or intrathoracic upon examination should be operated upon, for delay in these cases may prove hazardous. It is not wise to treat adolescent or colloid goiter by medical measures unless these patients can be contented and made to report back at stated intervals for observation.

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

We distinguish two types of adenomatous goiter—the nontoxic and the toxic. The nontoxic adenomata appear early in life but the symptoms of hyperthyroidism do not develop until midlife. Plummer showed, in a large series of cases, that the average age of development of goiter was 28.9 years, and the patients came for treatment because of toxic symptoms nineteen years later after having these symptoms two and one-half years.

The adenoma remains in a quiescent stage for many years. Treatment for the nontoxic adenoma should be prophylactic, to prevent later thyroid intoxication. Nontoxic adenomata which become cystic or undergo calcerous degeneration should be looked upon as surgical, for improvement cannot be expected under medical treatment. Iodin and thyroid extract should not be administered to patients with these quiescent goiters for fear of changing them into an active state. X-ray and radium are also valueless.

The treatment of the toxic adenomatous goiter patient should be surgical, and surgery should be employed early, during the insidious onset of the hyperthyroid symptoms, for the recovery after thyroidectomy is prompt and striking and the patient is safeguarded against the myocardial degenerations which often follow prolonged periods of thyrotoxicosis. X-ray and radium are valueless in the treatment of the toxic adenomatous goiter.

The onset in exophthalmic goiter is usually very acute and without the prodromal nervous symptoms. The patient is likely to be knocked down by the suddeness and severity of the intoxication. There is great prostration, rapid loss of weight and strength, great nervous irritability, with marked tremor, palpitation and persistent tachycardia, sweating, and oftentimes in the severe cases nausea, vomiting, abdominal pain and diarrhea—the gastric crisis.

As a rule no exophthalmos or other eye symptoms accompany the initial attack and there is little or no apparent enlargement of the thyroid gland on inspection. These initial attacks—less severe perhaps than the one described—are so often incorrectly diagnosed as nervous prostration or nervous disability. In fact, it is quite common to examine patients who have gone through one or more of these acute exacerbations and have finally developed eye symptoms and visible enlargement of the gland before the true cause of the symptoms is ever suspected. The writer has had several patients severely ill with exophthalmic goiter, showing gastro-intestinal symptoms, referred to him with the request for immediate surgical intervention for some abdominal lesion. The disease comes in waves and cycles—the first one often severe enough to kill the patient—with periods of remission and a return to almost normal health. Many cases run a mild continued set of symptoms between attacks.

There are undoubtedly milder or abortive types of exophthalmic goiter in which there is a return to health with or without treatment, but the disease can be distinguished from the adenoma with hyperthyroidism by the sudden and severe onset and by the marked exaggeration of all of the symptoms of the hyperthyroid state, compared to the slow insidious onset of the latter with the milder chain of symptoms.

The treatment of the acutely sick exophthalmic goiter patient, with a basal metabolism of sixty or over and with extreme symptoms of the hyperthyroid state, is essentially medical. It is best carried out in an institution accustomed to handling goiter patients and should be psychical as well as medical. Absolute rest, mental and physical, are most important and no operations should be attempted during a rising metabolism or an exaggeration of the symptoms.

The preparation of these acutely sick patients for operation can be greatly facilitated by the use of x-ray and radium. Terry reported gratifying results in the preparation of fifteen very sick exophthalmic goiter patients by the use of radium. We have used both to advantage in the preparation of many patients.

The question of the curative value of x-ray or radium upon exophthalmic goiter however is a very debatable one. Bowing, of the Mayo Clinic, believes radium to accomplish about as much as hot water injections. Plummer says the x-ray will have some refarding effect upon the thyroid gland, but is inclined to believe that most of the reported cures are due to a natural course of the disease. He believes that thyroidectomy is a better procedure than use of the x-ray. Crile says that the surgical treatment of hyperthyroidism combined with physiologic rest gives better results than x-ray or radium. C. H. Mayo reports failure, or but temporary benefit from the x-ray.

The treatment of exophthalmic goiter by x-ray should never be attempted except by one skilled in its use. The writer has seen some terrible burns follow x-ray treatment—the worst one followed but one exposure.

There are undoubtedly milder or abortive types of exophthalmic goiter which return to health with or without treatment. There are also milder continued types of hyperthyroidism with mild symptoms of the hyperthyroid state and with metabolism readings under thirty in whom we have used medical treatment with varying results. It is our practice, after securing the best coöperation of the patient, to place her at rest, correct any source of focal infection, give elimination strict attention, and use x-ray therapy on the gland. If the patient can ill afford the time which the nonsurgical treatment takes, she is given surgical instead of medical advice.

Frequent metabolism tests are taken after x-ray treatments and if the rates and the symptoms remain stationary at the end of eight or ten weeks, operation is advised. We have several patients who suffered with mild forms of hyperthyroidism, who have remained free from symptoms for periods varying from several months to several years as a result of this treatment or a natural return to health.

The writer is of the opinion that for certain selected mild forms of hyperthyroidism it is safe to give medical treatment a thorough trial, providing the patient is willing to coöperate in every way and will consent to surgical treatment should medical measures fail. There should be the closest coöperation between the medical man and the surgeon during the convalescence of the hyperthyroid patient. There is no disease where such coöperation is so important, unless it be gastric or duodenal ulcer. These patients should be made to rest under the guidance of a competent medical man for months—even a year or more after operation. They should be made to report to him at regular intervals for advice and treatment.

In conclusion let me urge again that no case with thyroid enlargement be considered in a surgical light until after a most careful, painstaking, and thorough examination, and let me condemn the prevalence of unnecessary, unwarranted, and unscientific surgery of the thyroid gland.

THE SURGICAL TREATMENT OF GOITER *†

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Goiter has become a perennial subject at our scientific meetings, a hardy perennial in those parts of the country where the peculiar and yet unexplained geographic distribution of the disease renders the question of great personal interest, and so in a section of our own state where at least five per cent of the inhabitants manifest thyroid disturbance in some form, the subject is ever an appropriate one for discussion and even worthy occasionally to be surrounded with the dignity of a symposium.

Of the contributions made to our knowledge of the thyroid gland, those of Marine and Kimball on goiter prophylaxis; of Kendall on the isolation of thyroxin; of Du Bois, Means, Aub, Benedict and Boothby on the application of basal metabolism determinations in the study of thyroid dysfunction; of McCarrison, Marine and Gaylord, on the etiologic factor; and of Wilson and McCarty on the pathology, are especially outstanding. With the data of these investigators must be included the results of the clinical researches of Plummer working with the tremendous material of the Mayo Clinic and those of C. H. Mayo, of Crile, Frazier, Crotti, Lahey and many others on the subject of treatment. The results of the work of these men stand out brilliantly clear, above and beyond the great mass of illogical theorization and conjecture that has recently diluted the literature with deductions by the page which bear but little discoverable kinship to their premises and which have accomplished nothing but to confound and befog the issue.

From what has definitely been established so far, two basic facts stand out as of especial importance. The first is that the active secretion of the thyroid gland is composed of a highly complex organic molecule containing iodin as an important ingredient, and second, that the chief function of the gland seems to be to act as regulator of cellular metabolism. Although the remote, fundamental cause of goiter remains yet to be discovered, the hypothesis that

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† From the Department of Surgery of The George F. Geisinger Memorial Hospital.

iodin is an active agent in the thyroid hormone and that goiter is, in all probability, a geologic deficiency disease due to a lack of iodin in the organism, is the closest solution so far made of the problem of etiology. The researches of Marine and his co-workers have definitely established the rôle played by iodin in the prevention of goiter of adolescence, while those of Du Bois and others who have rapidly followed him in the study of metabolism in thyroid disease, have cast new light on the subject of thyroid physiology, establishing as they have the part played by the gland in the control of oxygen consumption and heat production.

That iodin deficiency may play a part, possibly the fundamental rôle in the production of goiter of the colloid form, may be accepted without reservation, but that it is the provocative factor in the causation of the adenomatous, hyperplastic or malignant forms is a proposition open to discussion. That the physiologic disturbance resulting from a decrease in the iodin requirements of the organism may so operate to lower the effect of certain normal immune factors within the gland as to permit the entrance of infecting organisms from the blood or lymph streams, and thus establish an actual thyroiditis with inflammatory increase in size of the gland incident thereto, bringing about that condition we recognize as goiter, is a natural conjecture if not a logical deduction and is an accepted theory of many authorities. However, if this be a reasonable hypothesis it is yet true that iodin has but little influence on goiter once it has become established, except perhaps in the colloid forms, and it is also true that but little tangible evidence has yet been presented of the bacteriologic cause of the disease.

One quickly finds oneself wandering far afield into the realm of interminable speculation when engrossed with the fascinating subject of the thyroid and its pathologic states. A vast research must be conducted before the problem can be thoroughly elucidated but we are concerned, in this portion of the symposium, with the treatment of goiter and especially with the treatment of goiter by surgical means.

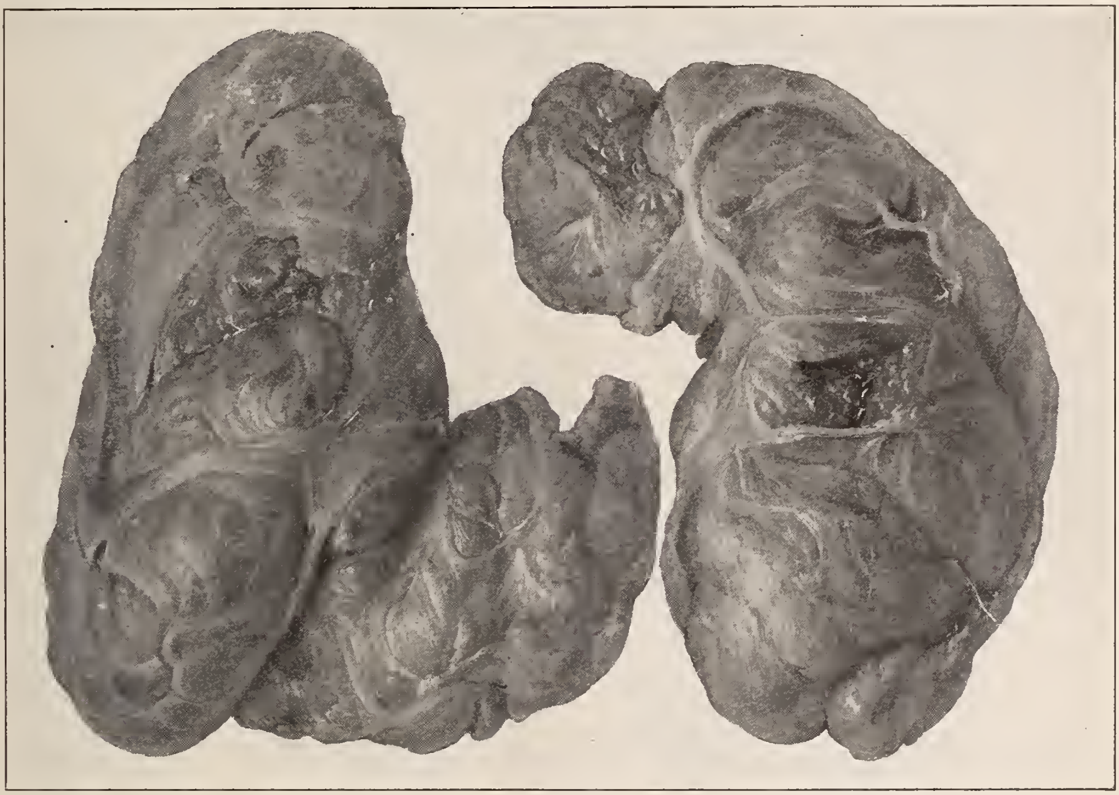


Figure No. 1.
Right and left lobes from large "colloid" goiter.

Nothing better typifies the tremendous advance that has been made by surgery than what has been accomplished in the treatment of the diseases affecting the thyroid gland. In 1866 Samuel D. Gross wrote, "Can the thyroid, when in a state of enlargement, be removed with reasonable hope of saving the patient? Experience emphatically answers, No! No sensible man will on slight consideration attempt to extirpate a goiterous thyroid gland. If a surgeon should be so adventurous or foolhardy as to undertake the enterprise, I shall not envy him his feelings while engaged in the performance of it or after he has completed it, should he be so fortunate as to do this. No honest and sensible surgeon, it seems to me, would ever engage in such a thing." We have advanced far in sixty years, and Gross, the leading surgeon of his time, would no doubt, be profoundly interested in the modern thyroid clinic where operations for the relief of goiter are of daily occurrence and which are attempted with every assurance that a prompt and satisfactory cure will be achieved, with but little discomfort to the patient and with a mortality of less than one per cent.

I believe at the present time there can be but little difference of opinion on the question of what is the appropriate treatment for the large nodular, so-called adenomatous and cystic goiters of adult life. If there are effectual means other than surgical of curing these conditions, I have no knowledge of them and do not believe they exist. That such lesions should not remain untreated is a truth positively established, for, with few exceptions, no person has existed many years with such a goiter without having suffered certain myocardial damage, and even if not for the sake of removing an unsightly and annoying tumor which produces increasing embarrassment to respiration and deglutition, the progressive degenerative changes such a lesion usually produces in the organs of the cardiovascular system positively indicate its early surgical removal. Such cardiac disturbance as sinus arrhythmia, auricular fibrillation, premature contractions and heart block are frequently associated with nodular thyroids of but a few years standing and are nearly always present in one form or another in pa-

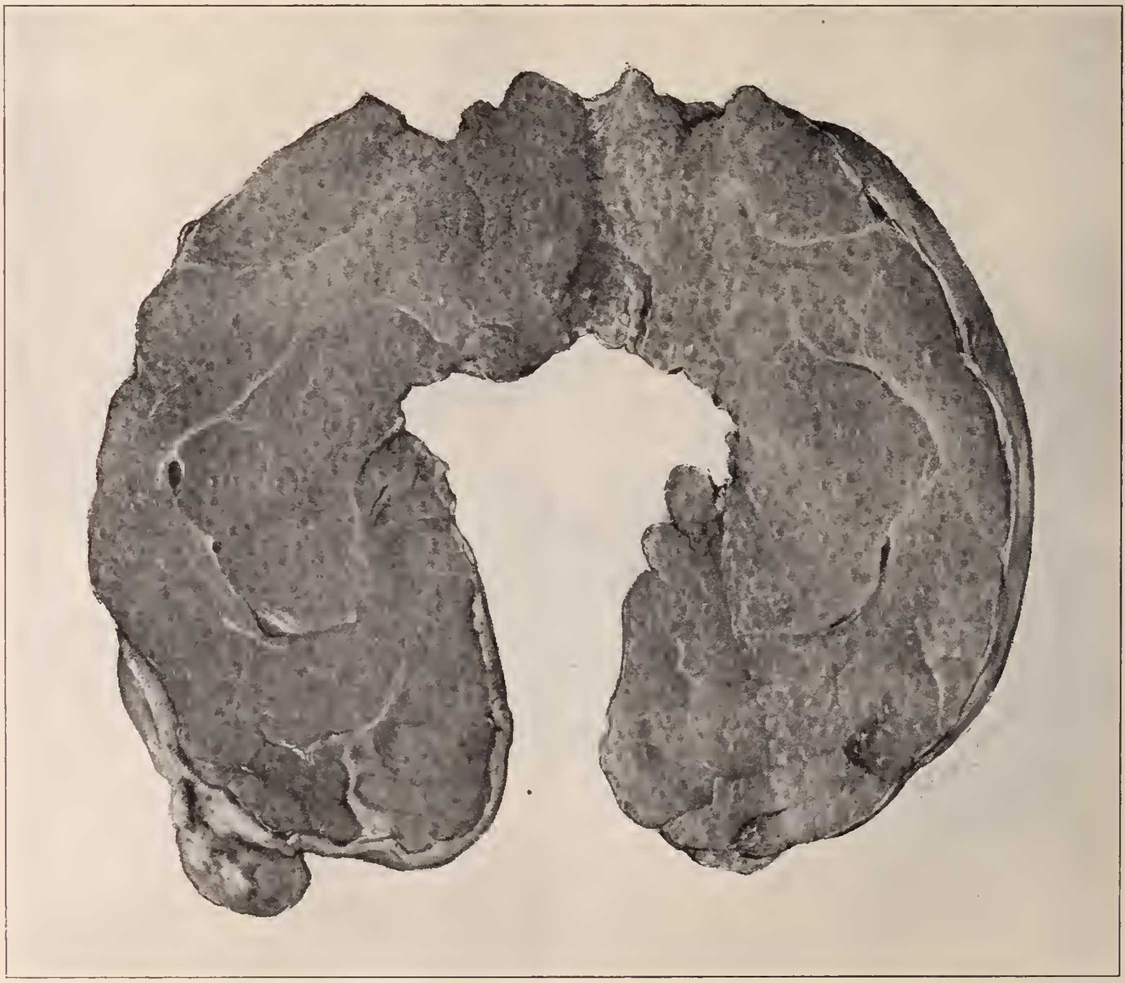


Figure No. 2.

Bisected lobe from large colloid goiter showing the granular, shiny "sago" appearance produced by distention of the acini with colloid.

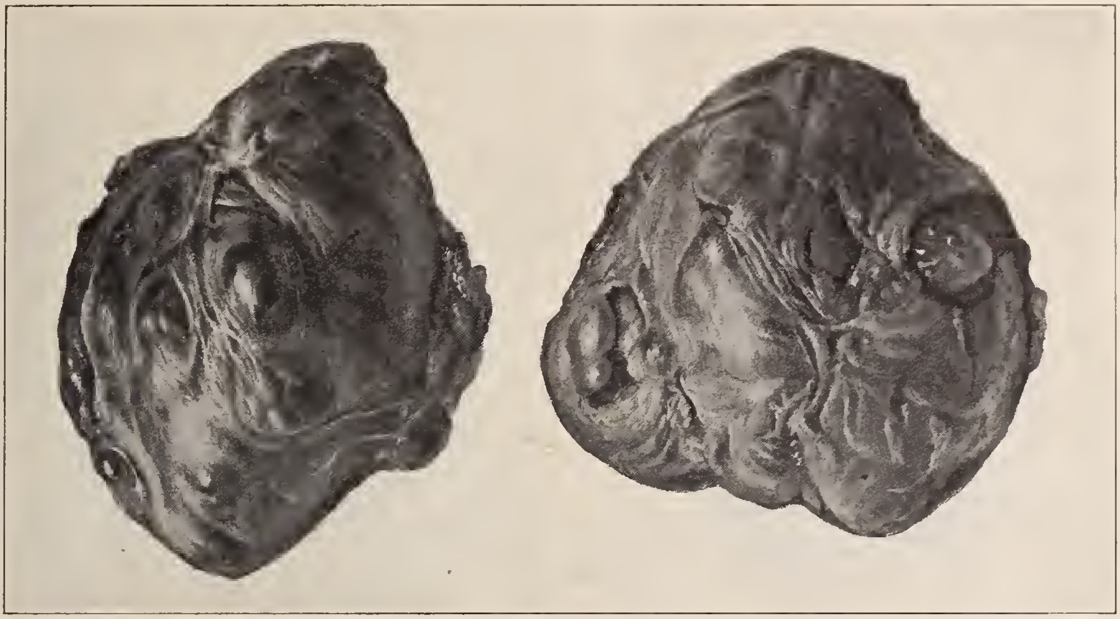


Figure No. 3.

External appearance of so-called "multiple adenomatous goiter." The term is an inaccurate one for many such goiters do not show true follicle formation. Such goiters are frequently associated with toxemia.

tients suffering with nodular goiters of many years duration. Nothing but surgical excision of the goiter will prevent the occurrence of such complication or will check their progress once they have become manifest.

Until very recently much uncertainty has surrounded the subject of the treatment of toxic goiter. There are apparently two common forms of this condition, separate and distinct, differing widely in their pathologic pictures but both accompanied by the syndrome of hyperthyroidism. Clinically both diseases are characterized by an increased basal metabolism and, therefore, have in common the symptoms developed by an increased rate. That adenomata may of themselves produce hyperthyroidism and that goiters frequently exist in which adenomata, either encapsulated or not, and areas of hyperplasia exist coincidentally have been proved. It is believed that in certain forms, hyperthyroidism may be produced by an excess of thyroxin thrown out from a hyperfunctioning adenoma, while the hyperthyroidism of true exophthalmic goiter seems to result

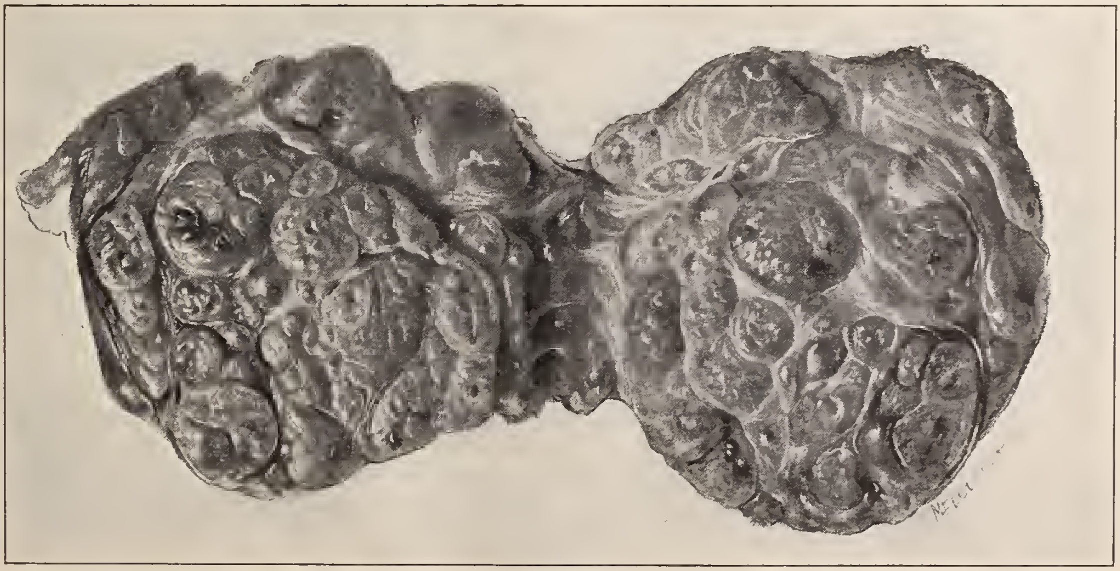


Figure No. 4.

Bisected lobe from "multiple adenomatous" goiter.

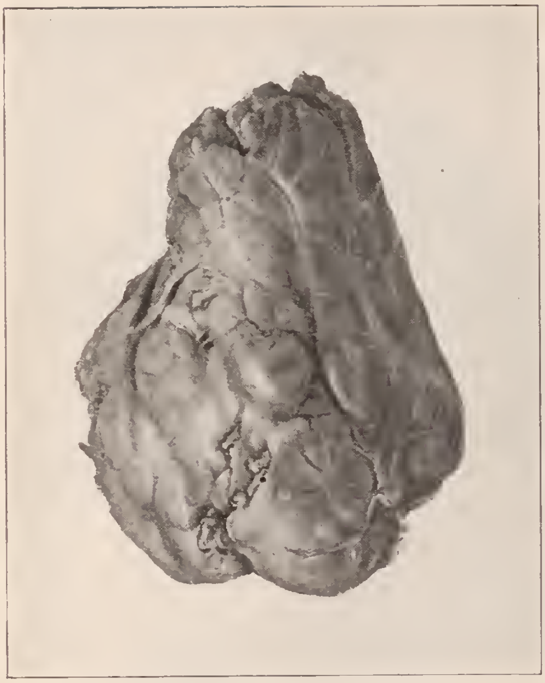


Figure No. 5.
External surface of left lobe resected from patient with typical exophthalmic goiter.

from an excess of gland secretion produced in the hyperplastic and superactive acini of the otherwise normal gland. In either case surgical treatment is practically the same and is aimed at reduction of the excessive secretion by resection of the gland.

Hyperthyroidism may be associated with colloid goiter, colloid adenomatous, multiple degenerative adenomatous and diffuse parenchymatous hyperplastic goiters. The disease is characterized by no single pathologic picture, being associated with a wide variety of thyroid lesions with but little other than cellular hyperplasia common to their histologic pictures. With all types the one cardinal factor in the clinical syndrome is the increased metabolic rate and it is this that is the basic symptom, just as is hyperglycemia, for instance, in diabetes.

A host of pathologic changes are associated with goiter, and the frequently seen inflammations, hemorrhages, calcifications and various degenerations must be considered no more peculiar to the thyroid than to other bodily tissue. Any or all may appear in the thyroid of the toxic patient, but the one finding peculiar to hyperthyroidism is parenchymatous hyperplasia, which can be demonstrated in varying degrees of activity in all toxic glands. It is generally accepted that hyperthyroidism results from an increase of thyroxin thrown into the blood stream from the hyperactive gland, therefore our treatment is based on the reduction of

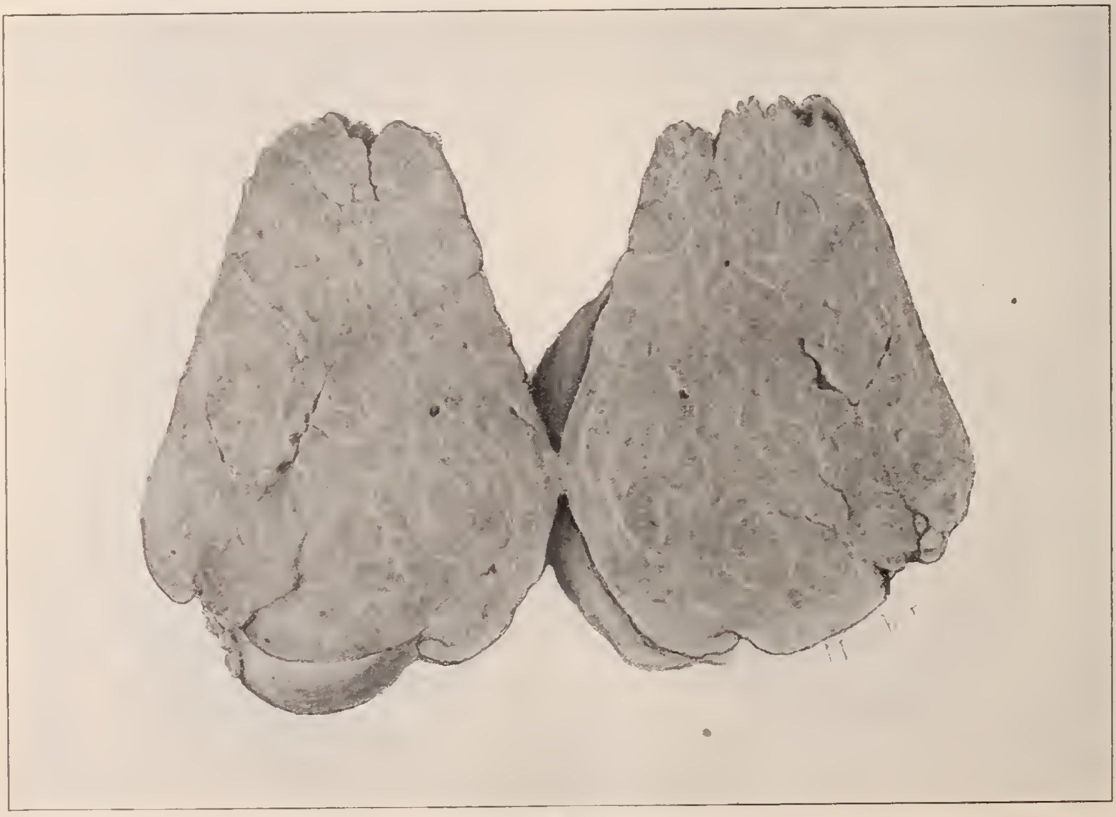


Figure No. 6.
Bisected lobe of typical exophthalmic goiter showing smooth, meaty "beef steak" appearance characteristic of this type of thyroid.

this abnormal output, whether the gland be that of pure exophthalmic goiter or whether associated with one or all of the associated pathologic conditions just referred to.

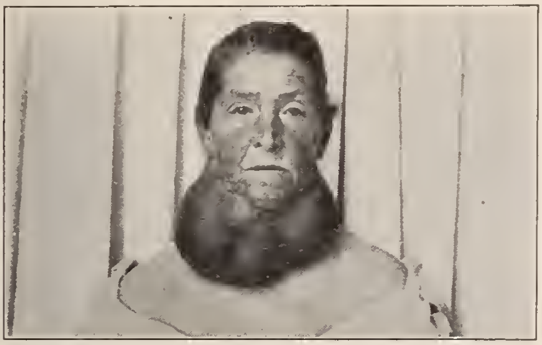


Figure No 7.
A typical nodular, so-called multiple adenomatous goiter.

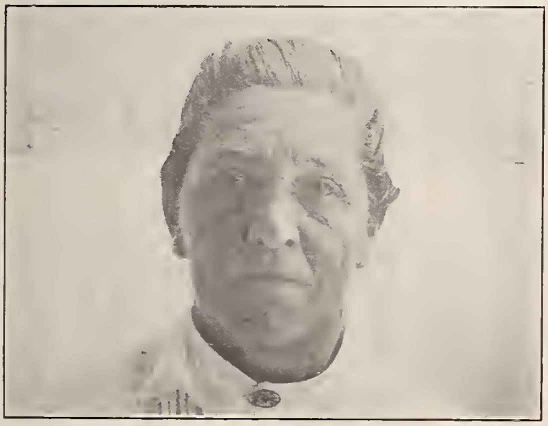


Figure No. 8.
The same patient as shown in Fig. 7, following operation.

Should we operate on the diffuse colloid goiters of adolescence? That this type of thyroid enlargement follows the gland's reaction to some form of indefinite physiologic stimulation, very possibly the result of iodin deficiency, is pretty well accepted. That the administration of iodin or thyroxin in such cases will often produce a rapid reduction of the goiter, as has been pointed out by Marine, Kimball and Plummer, seems also true, yet that such treatment will often not only utterly fail but will in addition produce rapid loss of weight with extreme nervousness and without perceptible change in the size of the gland is equally true, as I have found in my own clinic in a number of instances. There is at present complete lack of unanimity of opinion on this question, but I do not believe the usual small colloid of adolescence should be treated by the surgeon.

It is the patient with marked hyperthyroidism or exophthalmic goiter who gives us the greatest concern, for here we are dealing with the most serious and progressive disease affecting the thyroid gland and one especially grave when occurring in young girls of from 15 to 20 years of age. This is not an occasion for a debate on the relative merits of medical and surgical treatment in exophthalmic goiter. Both have their advocates. The nonsurgical treatment has its mortality and I believe it would be high if careful follow-up records were available. Ninety per cent of the toxic patients who come to us have been treated medically and in the majority of instances have not profited by the delay.

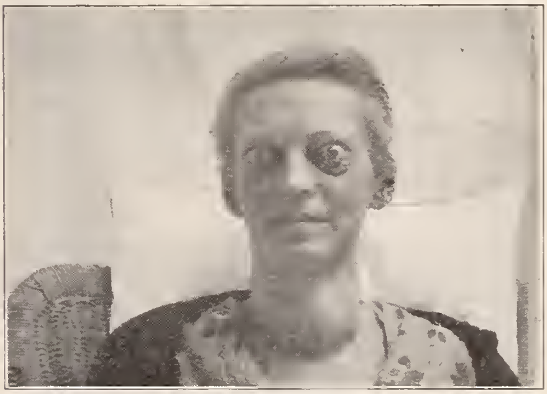


Figure No. 9.
Typical hyperthyroidism with pronounced exophthalmos.

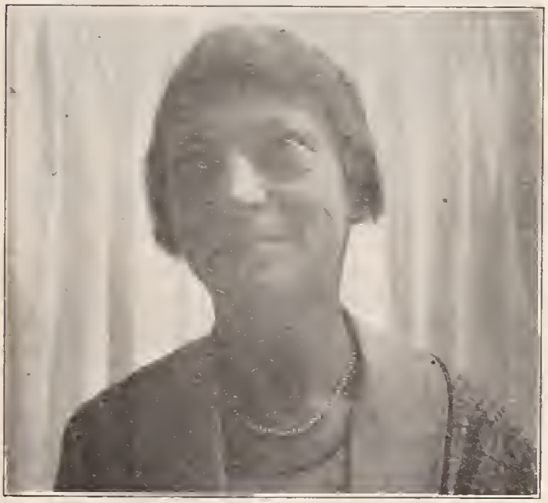


Figure No. 10.
The same patient as shown in Fig. 9, 8 months after double superior pole ligation followed by bilateral reaction. Pulse and basal metabolism normal. Weight gain 42 lbs.

In no branch of surgery must the characteristics of the disease be more thoroughly understood; the type of operation more accurately selected and the time of its performance more carefully planned than in the surgery of exophthalmic goiter, and judgment based on an extensive experience is the most essential feature in the control of mortality. At the Geisinger Memorial Hospital about sixty per cent of our patients receive preliminary ligations. The multiple stage plan of operation is carried out in all but the moderately toxic cases, the procedure beginning with a ligation of one superior pole, followed in four to six days by ligation of the other. Possibly the inferior thyroids will next be ligated, to be followed by one or two stage resection of the gland. Thus, step by step the patient is carried into a more favorable phase until the final and effective excision of the gland is achieved. By this means, patients who have appeared hopelessly toxic on admission to the hospital have been successfully operated upon and restored to health. Many of our patients on admission have been so ill that they would have been considered, a few years ago, as absolutely beyond aid. Some have even been delirious and yet have responded satisfactorily to this plan of treatment.

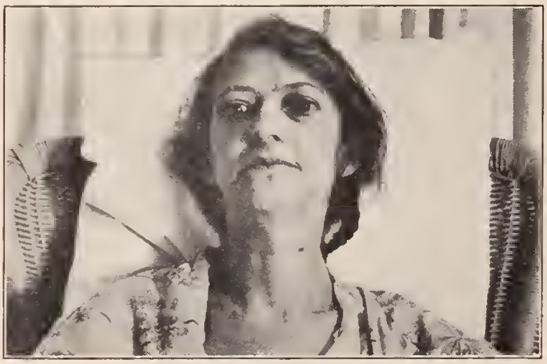


Figure No. 11.

Recurrent hyperthyroidism. Patient operated upon eight years before, at which time the right lobe only was removed. Temporary relief with recurrence of marked symptoms eight years later. Pulse 140. Weight loss 25 lbs. Basal metabolism 160.

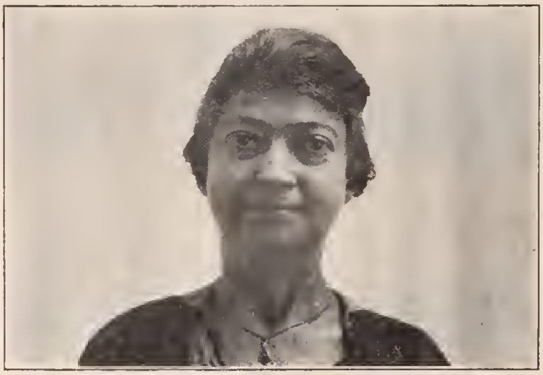


Figure No. 12.

The same patient as shown in Fig. 11, six months following superior pole ligation and resection of remaining left lobe. Weight gain of forty pounds. Pulse and basal metabolism normal. Patient's general condition excellent.

In our last series, 192 consecutive patients with goiter of various types have been operated upon without a death. Of these patients two were operated upon for suppurative thyroiditis, while there were six double ligations, twenty-nine single ligations, eighty-eight double resections and one hundred nineteen single resections, a total of two hundred forty-five operations upon the thyroid with no mortality.

CONCLUSIONS

At Danville, we are never without a number of thyroid cases under treatment, and the opportunity in our community and in those adjacent is especially favorable for careful follow-up observations on all our patients. We have had,

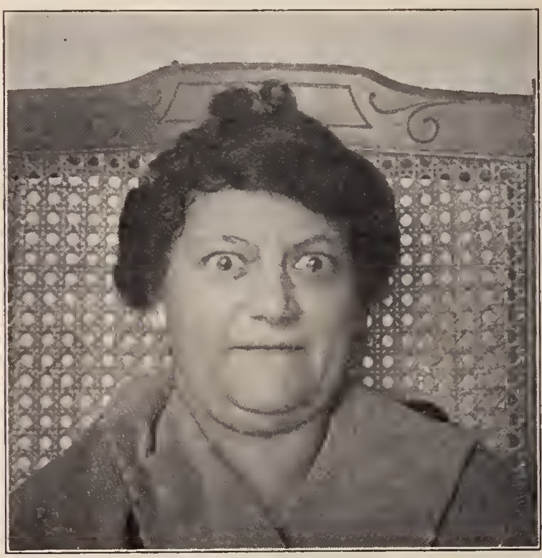


Figure No. 13.

Markedly toxic patient, too ill when admitted even for ligation. Preliminary treatment with radium followed by right then left superior ligation and later two-stage thyroidectomy. The most toxic case in entire series. Photographs taken after patient had greatly improved following superior pole ligations. When first admitted was far too ill to be photographed.

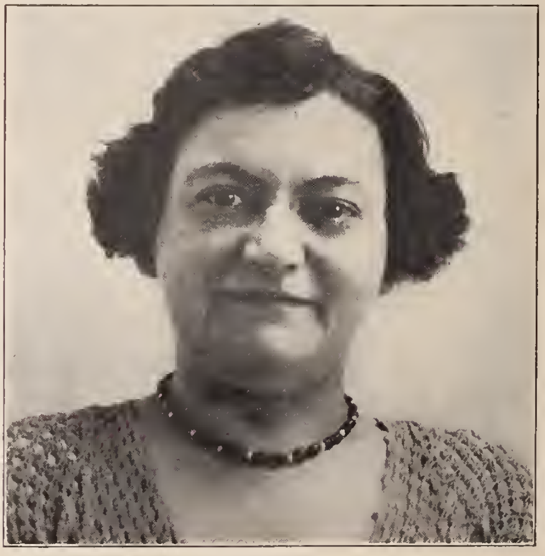


Figure No. 14.

The same patient as in Fig. 13 after final operation. Patient now perfectly well. Pulse and basal rates normal. Actively engaged as a milliner. Example of what may be accomplished in an almost hopeless case by the multiple stage operative method.

up to the present time, at the Geisinger Hospital about seven hundred goiter cases. From this experience I feel that I may, with some degree of justification, set down a sort of goiter creed or profession of faith, at least so far as my personal convictions are concerned.

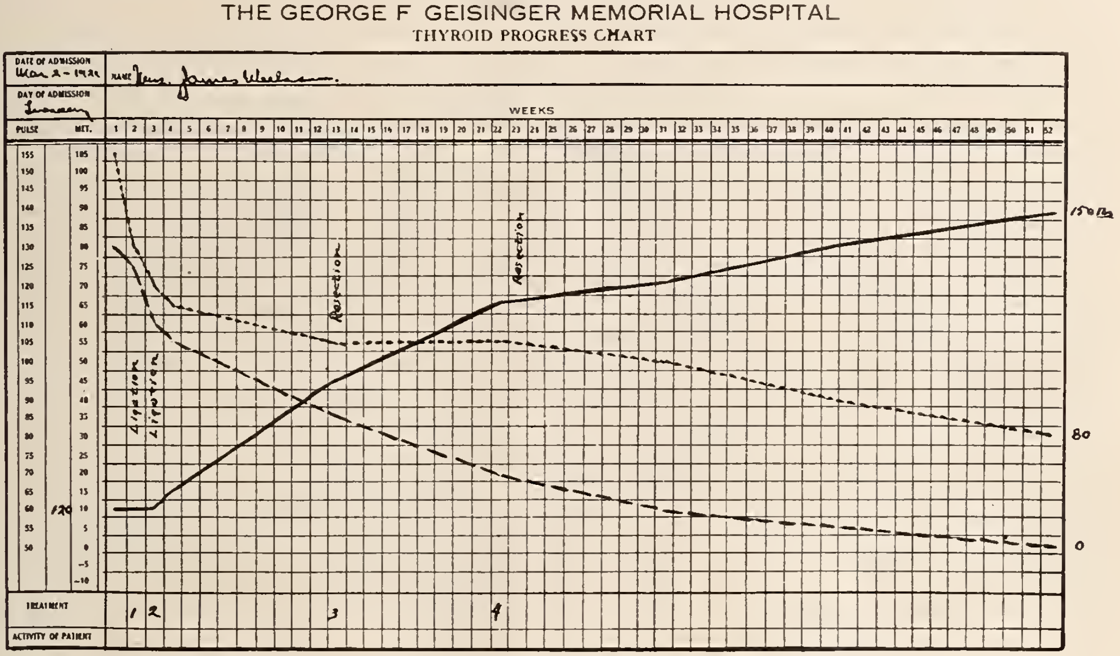
I believe that we are dealing with a highly specialized gland, with a complex and as yet little understood physiology and pathology but that certain basic facts have been sufficiently well established to indicate clearly a plan of treatment.

I believe that most goiter patients are being menaced by long periods of temporization with all sorts of therapeutic vagaries which in most instances accomplish nothing so far as relief of the condition is concerned, but by the usual interminable delay that goes with many such make-shifts the opportunity is furnished for an insidious and progressive disease to destroy the heart muscle and to demoralize the nervous system.

I believe that no medicine, no drug, no therapeutic measure of any sort except surgery should be utilized, except as adjuncts, in the handling of patients with goiter other than of the colloid and malignant forms. I believe that radium and the x-ray are valuable agencies in the preliminary treatment of very toxic cases, and in certain skilled hands may produce results in the true exophthalmic form of goiter equal to those of surgery, but that the process of treatment is long and often tedious and that the likelihood of relapse is great.

I believe that colloid goiter of adolescence is at present passing through that phase of surgical exploitation through which every disease seems to pass at the outset. The palm which was handed from the retroverted uterus to the appendix, and from the appendix to the movable kidney and ptosed stomach is being at present shared about equally between monkey glands and colloid goiter. The prevalence of small nontoxic colloid goiters of adolescence, the comparative ease with which they may be removed and the low mortality rate accompanying such removal have made thyroidectomy in young girls a favorite procedure with certain zealous surgeons, who either through crass stupidity or from a wish to swell their goiter statistics, or both, subject these unfortunate young people to a thoroughly needless operation. Such goiters are physiologic, are rarely toxic, usually disappear spontaneously and if treated at all should be treated by the physician.

I believe that innumerable patients have been subjected to needless operations on the diagnosis of exophthalmic goiter when the symptoms were merely those of effort syndrome, disordered action of the heart, neurocirculatory asthenia or functional neurasthenia; but on the other hand I believe even more persons with marked



Postoperative progress chart of typical case of advanced, markedly toxic, exophthalmic goiter. Heavy line—Weight curve. Upper dotted line—pulse curve. Lower dotted line—metabolism curve.

On admission, the patient's weight was 120 lbs., the pulse rate 155, and the basal metabolic rate + 80. At the end of the 52nd week following graded operations consisting of double ligation and double resection, the weight is 150 lbs., pulse 80 and the basal metabolic rate 0.

hyperthyroidism have been set down as cases of simple goiter and left untreated merely because the one sign of exophthalmos was absent, while all the other and equally important and thoroughly characteristic evidences of the disease were being completely disregarded.

I believe that much confusion in the differential diagnosis between toxic and nontoxic goiter has resulted in late years from the vogue of the Goetch adrenalin and other alleged tests on which reliance has been placed, rather than upon accurate basal metabolism determinations and especially on the sound judgment of clinical experience.

I believe that the results of basal metabolism determinations, blood sugar estimations, the Goetch test, the Kottman reaction, etc., if they are to be utilized at all, should merely be placed in evidence with other signs elicited in the general examination of the patient, and of these, the basal metabolism test is by far the most valuable.

I believe that surgery offers a great deal in the treatment of goiter, far more than any other therapeutic means, but that it must be most carefully regulated, the patient thoroughly treated in an institution where the staff is constantly in touch with this type of work, where the internist, surgeon and pathologist have equal opportunities for the study of the disease and where the team work is perfect. When such conditions obtain I know of no results in surgery which are more immediate, more lasting and more satisfactory than those following the surgical treatment of goiter.

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X-RAY AND RADIUM TREATMENT OF GOITER*

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To the radiologist intending to treat a case of goiter, the first step is the recognition of the type of goiter under consideration. There are many classifications of goiter. Since the prime indication for radiation treatment of goiter is the presence of hyperthyroidism, I will submit the following classification which has but two main divisions: 1, cases with hyperthyroidism; 2, cases without hyperthyroidism.

CLASSIFICATION:

Hyperthyroids
- Adolescents
- Hyperthyroids without goiter
- Hyperthyroids on basis of old simple goiter
- Exophthalmic goiter
- Intrathoracic goiter

Without Hyperthyroidism
- Adolescents
- Simple goiter
- Colloid goiter
- Cystic goiter
- Intrathoracic goiter
- Malignant thyroids

Cases in the first group may be treated by radiation; those in the second group should never be.

DIAGNOSIS:

The recognition of hyperthyroidism is not always an easy matter and often depends more on the combination of a number of so-called minor symptoms than on the presence of the generally recognized cardinal symptoms. These latter are nervousness, tachycardia, enlarged thyroid and exophthalmos. If exophthalmos is present, then I believe this symptom-complex represents hyperthyroidism in practically all cases. However, it is a widely known fact that many cases of hyperthyroidism do not have exophthalmos and there are few who would hesitate to make a diagnosis because of its absence. A diagnosis made on the remaining three symptoms, then, really means a diagnosis based on tachycardia, since nervousness is too common in the sick to have any value as a differentiating symptom, and enlargement of the thyroid is not essential to hyperthyroidism. For this reason, careful consideration should be given to the following symptoms, several of which will always be found in conjunction with any or all of the major symptoms mentioned above: Frequent headaches, weakness, loss of energy or inability to carry on the usual routine, often from unexplainable reasons; sleeplessness, depression, shortness of breath, palpitation on exertion or otherwise; digestive disturbances, especially gas, diarrhea, or constipation and diarrhea alternating; profuse sweating. The appetite is usually good, but in spite of this the patient loses weight. These patients have an anxious, worried look which one soon learns to recognize. This is so constant that if a suspected case sits contentedly in my office with a calm and serene look on her face, I never make a diagnosis without a basal metabolism test first. As a matter of fact, since this test has come into general use, I have it done on most of my cases and believe it really should be done in all. My experience with this test has been very satisfactory. While I do not believe one should make a diagnosis on this test alone, in many cases where the symptoms are very obscure or the history unreliable, a plus metabolism will establish the diagnosis. It is particularly valuable in the goiter of adolescence where one is not sure whether the enlarged thyroid is merely physiological, or a mild degree of hyperthyroidism exists.

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Having determined the presence or absence of hyperthyroidism by a consideration of the clinical evidence and the basal metabolism test, we next attempt to classify the hyperthyroids. Those without hyperthyroidism have no further place in this article as they should not be treated by radiation, with the exception of malignancies and here the radiation should supplement surgery.

Adolescent Goiter:

The goiter of adolescence occurs at or about puberty. It is usually physiological, but in a small percentage of cases becomes pathological. No treatment at all is indicated unless hyperthyroidism exists. If so, a small amount of x-ray treatment combined with proper hygiene brings about a speedy return to normal. Many of these cases, of course, recover under medical treatment alone, but the convalescence is unquestionably hastened by mild radiation. The percentage of recoveries in this class of cases is practically 100.

I have further subdivided hyperthyroids into those without goiter and the true exophthalmic goiter cases. I am not sure whether there is any fundamental difference between these two classes of cases, or whether they are simply different stages of the same disease. My impression at the present time is that many of the cases of hyperthyroidism without goiter are the result of chronic infections or irritations such as diseased teeth or tonsils, bad habits or bad hygiene, perhaps (as McCarrison believes) intestinal infections; and that exophthalmic goiter or true Graves' disease is a distinct entity and is usually the result of shock, fright, worry, or other derangements of the nervous system. We surely see a considerable number of hyperthyroids that appear to have little or no tendency to develop into serious cases of Graves' disease.

Hyperthyroidism without goiter:

We are accustomed to classify under this heading those cases in which exophthalmos and goiter are not predominating factors. Some of these cases have a slight exophthalmos without appreciable enlargement of the thyroid, some have enlarged thyroid without exophthalmos and some have neither, but they all have the symptom-complex of hyperthyroidism with an increased basal metabolism. These cases should be carefully gone over and any defects remedied before the hyperthyroidism is treated. If the tonsils are diseased and operation is inadvisable on account of the patient's physical condition, the tonsils can be radiated at the same times as the thyroid. I have had several such cases respond satisfactorily. I have also had cases of marked hyperthyroidism cured by removal of the tonsils alone, without other treatment. In these cases of hyperthyroidism without goiter, especially where a probable exciting cause is found, after such exciting cause is removed I believe radiotherapy should be the treatment of choice rather than operation upon the thyroid. Radiation will give satisfactory results in a very large percentage of these cases.

Exophthalmic Goiter:

In the well established cases of exophthalmic goiter, the treatment should be selected to meet the individual requirements of the case. In the acute case with extreme thyrotoxicosis, rest in bed and medical treatment may be the only thing possible, for the time being at least. The average case may be treated by radiotherapy, usually with good results. If there are pressure symptoms from the enlarged thyroid, surgery is preferable to radiation. This is particularly true in intrathoracic goiter where the pressure symptoms may be urgent. Surgery is also preferable in those cases which are unable from economic reasons to carry out medical or radiation treatment for a sufficient period of time, or whose home conditions or grade of intelligence make the proper hygienic treatment impractical. Also, patients of a naturally pessimistic temperament, or who have preconceived ideas of the futility of any other treatment than surgery, had best be operated upon at once, as otherwise their continual worrying and downcast state of mind is a powerful hindrance to their recovery. I do not mean to insinuate that patients can "wish themselves well," but I do believe that rest for the mind is as essential as rest for the body in the medical treatment of hyperthyroidism—and radiotherapy should be classed as medical treatment. A patient who lives in a constant state of excitement, worry, or depression, will not improve unless these conditions can be altered, and these facts should be considered when selecting the method of treatment. However, I believe that the same hygienic treatment should be carried out for several months following operation as is commonly used during the medical or radiation treatment.

Hyperthyroidism superimposed on simple goiter:

These cases are usually adenomata developing in a simple goiter, or else they are cases of exophthalmic goiter which go through periods of inactivity. In either case, the hyperthyroidism can be controlled by radiation, but as it has little or no effect on the goiter and usually none on the adenoma, especially if it is undergoing cystic degeneration, operation is preferable unless there is some contraindication.

Intrathoracic Goiter:

If accompanied by hyperthyroidism, this can be controlled by radiation. However, the treatment will have little effect on the size of the mass and if the pressure symptoms are considerable, operation is better when it can be done safely.

Radiotherapy of Goiter:

The value of radiotherapy in thyroid diseases depends upon the ability of the rays to produce an inhibition or abolition of the secretory function of the gland, or even the complete destruction of the secreting cells themselves. It is obvious, then, that this treatment is only indicated where there is an excessive secretion from the thyroid, that is, in hyperthyroidism. If there is no hyperthyroidism present, radiation is not indicated. In fact, it is contraindicated, since the atrophy which will be produced by the treatment will reduce the normal gland to a state of hypothyroidism or myxedema. For this reason it is necessary to make a careful and accurate diagnosis before instituting or recommending radiotherapy. If it is definitely decided that no hyperthyroidism is present, this treatment should not be used, even if there is thyroid enlargement. We never treat large thyroids for cosmetic effect, for two reasons: *First,* if there is no hyperthyroidism, the treatment is harmful; *second,* the size of the gland is not apt to be much affected by the treatment except in hyperthyroid cases, and these are usually too sick to bother about the unsightliness of their large necks. The gland does not reduce much after radiation because the destroyed secretory cells are partially replaced by fibrous tissue which leaves the patient still with a large gland.

As regards the method of application, I have had the best results from rather mild dosage. At the present time, I treat the patient once a week, exposing one lobe of the gland only at each sitting. This makes only two areas to treat. I have discontinued treatment of the isthmus as a routine procedure. Each area is given about one-half a skin erythema dose at each sitting, and after both lobes have been treated the patient is given a rest from treatment for two weeks, when the process is repeated. There are two advantages in spreading the treatment out in this manner. The first is that you see the patient oftener, and thus have a better chance to observe her progress and to control her actions. The second is that it takes a patient several months to return to anything approximating normal after a severe hyperthyroidism, and large massive doses cannot be persisted in for this length of time. The dosage indicated is not so small, nor so frequently repeated as to increase the danger of telangiectases, but is still enough to cause a gradual regression of the disease and I believe is the happy medium which gives the best results. I use x-rays of a penetration corresponding to a 9 inch parallel gap, filtered through 6 millimeters of aluminum. When I use radium, I use only the gamma rays, with the radium placed 1 inch from the skin. I have discontinued the routine exposure of the thymus area in cases of hyperthyroidism unless roentgenograms show that the gland extends down into the chest, or that the thymus is enlarged. A few years ago, this treatment was considered essential, but after following the method for two years without any apparent improvement in results, I abandoned it about three years ago.

The radiation treatment must be supplemented by a careful regulation of the patient's hygiene. The patient must have as much rest as possible. Occasionally, the patient must continue employment in some gainful occupation as a means of livelihood, or perhaps do her own housework. If the patient must work, she must also be brought to realize the necessity of saving herself as much effort as possible and resting completely when her work is finished. Severe physical exertion and excitement are very bad for these patients. They must have 8 to 10 hours sleep out of each 24. They must have plenty of fresh air and all the nourishing food they can take care of. Tea, coffee, alcohol and tobacco are forbidden and meat allowed only occasionally. Late hours, parties, etc., are forbidden. However, it must be remembered that such restrictions can be carried to the point where boredom worries the patient worse than a little diversion.

I am not in the habit of using any medicine whatever in conjunction with radiotherapy. I am occasionally asked to administer iodin or thyroid extract to cases I am treating. The only times I have tried this, the patient has been made worse by such medication.

I use the roentgen ray instead of radium in the average routine case for two reasons: 1st, it is cheaper for the patient; 2d, my radium is usually busy treating cases where the x-ray cannot be used on account of the location, viz., mouth, uterus, etc. I believe the action of the two is identical and either may be used. Where it is inconvenient for the patient to come to a roentgen laboratory for treatment, radium may be used and the applications made less frequently. It is in this class of cases that I use radium the most. Where the thyrotoxicosis is severe, care must be taken in the application of radium that too large a dose is not given and the condition greatly aggravated. In treating thyroids, not more than one-half an erythema dose should be given at a sitting, either with radium or with x-ray.

If the patient does not improve under radiotherapy, it should not be continued indefinitely on account of the danger of producing secondary changes in the skin. The average case requires about six months for regression to a stage where treatment may be discontinued. If each area of skin receives but one treatment every three or four weeks with half an erythema dose at each sitting, there is not much danger of secondary skin changes such as telangiectases. However, under the most favorable conditions, telangiectases will occur in a small percentage of cases, just as keloids will develop after a certain percentage of operations. If there is no definite improvement as shown clinically and by the basal metabolism after six months' radiation, the case should be operated. If the case is slightly improved, but not well, radiation can be continued at long intervals and the medical and hygienic treatment persisted in until the patient returns to normal.

DISCUSSION

Dr. Samuel J. Waterworth (Clearfield, Pa.): The subject has been so thoroughly well covered that any further remarks seem to me superfluous, other than to emphasize certain points. One is that too much thyroid surgery has been done in the past. I am willing to confess that I myself have done too much thyroid surgery and that I am doing less of it. I am seeing more thyroid cases and doing less surgery. I believe that the chief mistake has been made in taking out adenomas under 25 or 30 years of age. In the last two years I have had one patient that I operated on before 20 years of age. Of course everyone knows that the adolescent goiter is entirely medical and that the simple adenomata early in life are medical.

It becomes more and more apparent that thyroid surgery should be done at places where they are prepared to take care of thyroid cases. Dr. Guthrie has called attention to the psychic factor, which is most important from the time the patients are received into the hospital until they are improved.

As to the medical treatment of goiter, of course we all are agreed about the idea of therapy. In a certain class of cases in large, obese women, with large goiters of the adenomatous type, some of which have become cystic and some have undergone calcareous degeneration, when the women are not only obese, but some are myxedematous, I have used thyroxin with benefit. Thyroid extract by mouth I believe is bad in such cases. It is an uncertain way of giving it, but when you give thyroxin intravenously in small doses you know how much has been given. If you see the patients often you can control them. Another disadvantage of feeding by mouth is that they take medicine and get along for a long time and do not come back to see you. When you give it intravenously they come back and you have them absolutely under control.

I should like to make a plea with Dr. Grier that all cases of goiter be gone over most carefully for focal infection. I do not think we should be in a hurry to operate on any goiter case. When a goiter case comes to the office the first thought is to go over the case from every standpoint. If toxic adenoma is present you have plenty of time; you can probably take out tonsils, refer to the dentist and have his work done before referring for operation. If surgeons are going to do less thyroid work, operating on only their dangerous cases, only their cases of hyperthyroidism and toxic adenomata, their mortality rate is going up, that is, their operative mortality.

Dr. Lloyd G. Cole (Blossburg, Pa.): I was glad to hear Dr. Grier state that he was in favor of smaller doses of x-ray. I think in the past the x-ray has been an indefinite sort of treatment and I know that a great many cases have been over-exposed. I never had it clearly explained to me just how much damage you are going to do to the parathyroids. I once saw a case which had heavy x-ray exposure and I believe she was developing tetany. She had mild stiffness in the fingers. I gave patient intravenously calcium lactate and she improved. Whether the x-ray had anything to do with the damage to the parathyroid I do not know. Another thing I do not understand is just what damage might be done to the recurrent laryngeal nerve in very heavy x-raying.

In thyroid work the improvement in recent years has been due to the fact, I believe, that our pathologists have simplified our classification of goiters. They have made a classification that they understand and the rest of us understand, so that we understand each other better. The pathologist and surgeon have been working more closely together. Graham makes a very simple classification into simple goiters, hyperthyroid goiters and the malignancies of the thyroid. Graham has found that cases of fetal adenomata are especially prone in later life to malignant development and I believe that there are more malignancies of the thyroid than was formerly believed.

In regard to the ligation of the inferior thyroid artery, I believe that the parathyroids gain most of their circulation from the inferior thyroid arteries and the ligation of both of these arteries may result in a tetany three or four days following thyroidectomy. We treat these tetany cases with calcium intravenously. There is another condition that has been brought to my mind more in recent years—the condition of the goiterous, laryngeal paralytic stenosis following thyroidectomy. Some of us have been greatly concerned over the fact whether we have done damage to the recurrent laryngeal nerve. I believe in large adenomatous goiters that more commonly than has previously been observed, we will have developed a paralytic stenosis. It is a very distressing condition and a condition which concerns the surgeon very greatly. In the majority of these cases, the recurrent laryngeal nerve has not been injured at the time of the thyroidectomy. I believe that every case that comes before the surgeon for thyroidectomy should have a thorough laryngeal examination before the operation is made.

One more thing about our apparatus: Less than two weeks ago Dr. Crile stated to me that the basal metabolic estimation was especially of value in the differentiation of border-line cases. He said, "I do not use it in hyper cases so much, on account of the psychical effect and the routine of putting them through the metabolic test."

Dr. Charles H. Frazier (Philadelphia, Pa.): In reference to the splendid surgical papers that have been read, I think we all feel that Dr. Marine has given us a most constructive contribution to the subject of goiter. I have felt for a long while that toxic goiter is more or less of a transitory condition, and that the management of toxic types should be the same as in other forms.

I was going to say a word in regard to basal metabolism. There are in our profession certain supermen that have risen to the plane where they do not need the assistance an examination with modern instruments will give them. I am sure that Dr. Crile does not belong to that group and I was very glad to hear Dr. Cole say that Dr. Crile acknowledged that he still used the basal metabolism apparatus. Personally, I would not accept on their face value statistics of anyone in which the diagnosis and the differentiation between the various types of goiter were not substantiated, at least, by the metabolic apparatus. We have used this apparatus in our clinic for a number of years (since early in 1919) and we have not changed our opinion in regard to it. In fact, I find that every member of our staff becomes more and more enthusiastic about it.

About that time we made an arbitrary classification of toxic goiters into three groups: those with a metabolic rate up to 40%, those up to 50% and those up to 60% and over, and we made an arbitrary ruling that we would always do a primary thyroidectomy up to 50% and never do a thyroidectomy when above 60%. In Philadelphia, we have practically nothing but toxic goiters. We never do a thyroidectomy when basal metabolism is bove 60%, and we find that a very good working rule whenever you are in doubt as to the toxicity of the case, judging it alone from any other clinical phenomena. Basal metabolism in toxic goiter is just as essential as is the x-ray film in the record of a fracture history. Following that general plan of surgical treatment based on the degree of toxicity, we have been able to reduce our mortality to what we consider a comparatively low point, though not as low as those noted this afternoon.

I am in entire accord with the general principles that have been laid down in the paper of Dr. Guthrie and Dr. Foss this afternoon. I think they presented the surgical aspect of goiter in an able and intelligent way and I also approve the conservative views Dr. Grier has taken in regard to the x-ray treatment. Personally, I have not the slightest objection to a patient being transferred to the roentgenologist for treatment, provided the roentgenologist understands the goiter problem as well as I do and will return that patient to me at any time if there be retrogression in the course of that particular case. Such a relationship I have with Dr. Pancoast in the University Hospital in Philadelphia. And in turn, cases which initiate in his department he will transfer to my department if patients do not yield promptly to roentgen therapy. I do not believe we ought to wait too long because most of the toxic cases should be operated on at a reasonably early stage rather than take the desperate risk. I think Charles Mayo stated the situation when he said he had lost about ten years of his life working in the goiter clinic. Management of these desperate goiter cases is wearing on the surgeon's nerves.

I would take exception to the statement made this afternoon in regard to the actual technic in either ligation or thyroidectomy. I have a feeling (and I may be entirely wrong, I am afraid, because my position is not accepted by the majority) that there is less hazard as a rule in doing a double ligation than in doing a single ligation on a bad risk, and I have the same feeling that there is less hazard in double than single lobectomy in such cases. I feel very much more comfortable if I have carried a bad risk through the point in an operative procedure where both lobes are removed than if I had left too little to prevent symptoms of tetany, which may carry him or her off in 24 hours. In those cases in which in the course of operation there is unavoidable loss of no inconsiderable amount of blood we have found that convalescence is hastened by the use of indirect blood transfusion immediately after the operation, either in the operating room or after the patient is returned to bed.

Dr. William S. Newcomet (Philadelphia, Pa.): Dr. Grier has fully covered the subject of treatment of goiter by the roentgen ray, and the most important point in his paper is the one he makes upon dosage. By following his recommendation, giving only small units at each sitting and repeating them at proper intervals, it is hardly likely that one will observe the horrible burns mentioned by some of the speakers. In the early days when the control of the x-ray was more or less a matter of speculation, severe reactions were observed and quite often the treatment, if not a disaster, was annoying. In fact, most individuals preferred the scar of the knife rather than reddened skin or keloid following the x-ray reaction. At present the treatment of goiter with the very mild dosage must not be confused with the results of the new high-power, high-penetration dosage given in malignancy.

The conditions are quite different and are as far apart as the north and south poles.

Radium is to be preferred to the x-rays in those cases where the condition of mental irritability makes the latter dangerous or the enforcement of restraint annoying. Radium can be applied with absolutely no discomfort to the patient.

In the last few years a number of cases have been referred for treatment in which, when the operation had failed to relieve the symptoms, they were treated by the x-rays. The dosage given was about the same as recommended by Dr. Grier, and they were relieved of their distress from their cardiac symptoms. It may not be amiss to call attention to the fact that these cases were referred for treatment by other physicians, showing that in some localities there is not that existent terror of the x-rays.

It would seem that in selected cases there should be no reason why radiation should not be tried before operation; then if there is no relief from this very easy procedure the more difficult one could be followed.

Certainly the employment of the metabolic test in these cases cannot be considered harmful. Furthermore it will be a guide to the amount of radiation required, and particularly when there is only a slight difference between the hyper and hypo case.

A number of young women and girls have been referred for treatment where the symptoms were due to eye-strain, constipation or indigestion, and by the correction of these derangements were relieved without the application of the x-rays. Therefore, all cases subjected to radiation should be placed under the same critical examination as if they were to undergo a major operation.

Dr. Jonathan M. Wainwright (Scranton, Pa.): I would emphasize the question of focal infection, because I am quite sure that is it not appreciated as much as it ought to be. My associate, Dr. Jackson, sees most of the simple forms of goiter first and he has for some time adopted an iron-clad rule that when these cases do come in they are always thoroughly looked over for foci of infection, and he has a very surprising series of patients in whom these tests have been made and one thing and another found, remedied and the whole so-called goiter picture has disappeared. I emphasize that because a great many do not appreciate it at its full value. All of us should insist upon this more. If these cases are thoroughly searched the question as to surgery or x-ray often would not have a chance to develop very much further.

One other thing that I should like to object to is the very general use of the term goiter of adolescence. I think that is a term which is very much over-ridden. If a young girl, from 14 to 18, has a thyroid gland which you can feel, it is not necessarily a disease. The merely palpable gland in a girl is not a goiter of adolescence, or anything at all, and the sooner we make the child and her mother realize it, the better for everybody. If we get it into our heads that there is such a disease as goiter of adolescence we are going to have an absent-minded fit occasionally and operate on some of them.

If we tell the people that the child has a goiter of adolescence but that it does not need to be treated they will not believe us. They will be quite sure that a disease with a name like that must be treated. And they will find somebody who will take it out, or who will x-ray it. More likely perhaps it will be an osteopath or a chiropracter, and if these geniuses are not too rough the child after awhile will have become perfectly normal.

If a young girl comes to us at puberty and we note her breasts are a little larger and firmer than usual we do not damn her by telling her she has bilateral hypertrophic mastitis. Why pin a terrible sounding name on a child because the thyroid is a little bigger than usual?

Dr. A. E. Roussel (Philadelphia, Pa.): I have been more than pleased by the favorable expressions regarding the value of basal metabolism by the speakers. I am an internist and not an x-ray man. Formerly when I found the medical treatment of toxic goiter, especially the exophthalmic goiter, did not improve, in a large percentage of my cases I turned them over to the surgeons. In the past few years the x-ray treatment of goiter, together with rest in bed and increased feeding, a point which should be emphasized, has materially changed my views on the subject, and I have so reported these facts on different occasions. I have now over 50 cases of my own that have been treated by x-ray, without counting other cases that have been under my observation. Thirty-five are of the acute exophthalmic type. In fact, the first case was refused operation by a prominent Philadelphia surgeon, and we tried the x-ray on her. The acute exophthalmic type is much more favorable than the colloid or adenomatous, which subsequently become toxic. They are to be left to the surgeon. The other cases show a vastly pronounced benefit. I think about 75% of my cases have been cured and 10 or 15% improved, and some of the cures are seven years old.

As to basal metabolism, if particularly high (over 50 or 60), even the x-ray dosage should not be employed at that particular time, but rest in bed and a proper diet, for a period of time previous to the exhibition of rays should be prescribed. And I take it the surgeons should adopt the same procedure previous to their operative interference.

Dr. Guthrie (in closing): I heartily agree with what Dr. Grier and Dr. Newcomet have said about employing small repeated doses of x-ray for these cases. Some eight or nine years ago two x-ray men came to Sayre to see our work, and wrote us up in a rather uncomplimentary way, because we did not use the full therapeutic skin dose of the ray in our treatment of the patients. I believe there is a hyperemic state of the skin in these exophthalmic patients which will not stand a strong dosage of the ray. Anyone seeing x-ray burns follow x-ray therapy in these goiter cases is bound to be conservative. X-ray therapy should be used only by those who are experts in its employment. I was particularly careful to say in my paper that it is only the patients showing mild continuous symptoms of hyperthyroidism and with a basal metabolism below thirty per cent, who should be given the opportunity of improving under conservative treatment. I call particular attention to rest, elimination, and the correction of any source of focal infection. Let me repeat that after a reasonable length of time—two or three months—if there is no tendency for improvement, and no change in the basal metabolism rate I believe that operation is advisable.

Dr. David Marine (New York City): One of the most pleasant things I have ever experienced at a medical meeting has happened this afternoon—a representative group of surgeons from a great state advising conservatism in operations on the thyroid. This marks a great advance over the attitude of a few years ago, and it is greater perhaps than most of us now realize. Dr. Wainwright emphasized the so-called physiological thyroid enlargements—those mild thyroid insufficiencies which occur around the age of puberty—and that great caution should be exercised in advising operation in these cases.

As regards exophthalmic goiter, I have spent seventeen years studying it and must confess we still know very little of its fundamental nature. I realize there are those who think differently. The thyroid certainly is only secondarily involved, but it is markedly involved, and the fundamental problem to be solved in order to clear up the nature of the disease is what excites the thyroid to increased activity. A few years ago it was considered bad form to refer to the thyroid as being secondarily involved in exophthalmic goiter. To-day, almost every one believes that the primary stimulus which initiates increased thyroid activity lies outside of it and probably in the field of disturbed interrelations of the sex and parasex glands with the thyroid. There is no question that at present the best means we have of controlling exophthalmic goiter is by depressing the increased metabolic rate by partial thyroid extirpation, but this is a very crude means, and if our premises are correct it is attacking the disease from the wrong end. I feel confident that the day is not fâr distant when we will have a much clearer conception of the nature of the disease and be able to control or prevent it by more rational means than thyroid extirpation. But do not misunderstand me; at present the quickest way of lowering the metabolic rate and of giving the patient physiological rest is by partial thyroid removal.

It is now generally realized that we will never keep our heads above water in the fight against simple goiter by treating it either medically or surgically. We must apply some method of prevention. Fortunately, such a method is available. In the case of exophthalmic goiter, it is equally true that we will not be able to hold our own in the fight against it by treating it medically or surgically. Again, some method of prevention must be developed and unfortunately this looks at present a long way off. This becomes of even greater moment when we consider that while simple goiter is in general decreasing, exophthalmic goiter is unfortunately increasing. Exophthalmic goiter and toxic adenoma, in my opinion, are only different phases of the same disease. It is largely a question of the age at which they develop. These adenomata become toxic about the time of the menopause in most cases. Adenomatous or nodular goiter is the usual form of goiter in man. The lower animals do not have thyroid adenomata. The inhabitants of India and of the Alpine districts of Europe have adenomatous goiters as frequently as we do, yet toxic adenoma is exceedingly rare. Dr. Foss said the number of nontoxic adenomata were much fewer than those that were toxic. That is true, because his experience is surgical. Nevertheless the vast majority of thyroid adenomata are not associated at any period of life with toxic symptoms.

Dr. Foss (in closing): I believe Dr. Marine misunderstood me slightly. While all nodular goiters are not associated with hyperthyroidism, goiters of the adenomatous form, even when producing no definite evidences of toxemia, seem to play an important rôle in the production of parenchymatous changes in the myocardium. Kocher called our attention to this many years ago, while Krumbhaar of Philadelphia and Willius of the Mayo Clinic and many others who have resorted to the electro-cardiograph as an aid have established a definite relationship between nodular goiters, particularly the degenerating forms, and myocarditis. Many adenomatous goiters apparently are symptomless, causing no evidence of trouble other than from mechanical pressure, but a very large number, particularly if they are of long standing, must be considered as a potential menace to the individual.

Dr. Roussell (Philadelphia): What percentage?

Dr. Foss: (Answer) I would say that at least 30% of patients with long-standing nodular goiters will show, roentgenologically, enlargement of the heart, and under electrocardiographic studies, definite evidences of myocardial damage. This whole question is yet in a nebulous state and requires much careful research before it can be thoroughly cleared up. Dr. Ervin and I have watched a large number of these patients at Danville during the past few years and have been struck with the great prevalence of nodular goiter associated with myocardial decompensation in patients who do not show positive evidences of hyperthyroidism.

Dr. Sheridan spoke of double ligation and of the excellent results which usually follow such a procedure. The improvement in a severely toxic patient following such an operation is often startling, but such patients should never be permitted to pass out from under our observation until a thyroidectomy is ultimately performed, for although greatly improved and often apparently cured after ligation of both superior poles, a relapse will surely occur if excision of the gland is not carried out. Such patients may remain well from two months to several years following a double ligation but practically all will relapse if an excision is not performed. The same is true if the operation consists merely of a lobectomy. A permanent cure will never follow such an incomplete operation. I have operated on a number of patients on whom partial thyroidectomies or ligations have been performed and who for a time were apparently cured, yet in whom there was a recurrence of symptoms with profound hyperthyroidism developing later.

I was startled by Dr. Grier's statement relative to roentgenology in the treatment of exophthalmic goiter occurring in the patient of moderate means. If I understood Dr. Grier correctly he said that the economic side was an important feature and that when the patient was of limited means it was better for him to seek the surgeon rather than the roentgenologist. It seemed a very surprisingly unexpected and altogether frank statement.

We have been very fortunate in having the opportunity of hearing Dr. Marine this afternoon. As President Litchfield has well said, what he has given us has been real wisdom. The many years of intensive study Dr. Marine has devoted to this subject, his unusually well-ordered mind, and his gift of scientific and productive research, have resulted in his becoming probably our greatest authority on the thyroid gland.

Dr. Grier (in closing): Dr. Cole has asked what was the influence of x-ray treatment upon the parathyroids. We do not destroy the thyroid but simply cause it to regress to normal, and I suppose the same thing applies to the parathyroids. There is not a complete destruction, but simply a regression. In regard to the effect on the recurrent laryngeal nerve, I should say that the nerves are probably the most resistant of any tissue in the body to radiation. I remember seeing about twenty years ago a very severe x-ray burn on the abdomen, where the entire abdominal wall was sloughed away and the nerves swung across this empty space like telegraph wires. I have never seen any effect on the recurrent laryngeal nerve that could be attributed to radiation.

Dr. Frazier brought up the point of keeping up radiation until the patient is finally in such a state that it is difficult to do anything for her. This brings up the question as to how soon you should expect a patient to get better under radiation treatment. I do not think you could expect very much change inside of a month and should not expect a patient to recover inside of six months. It is not fair that radiation treatment be given up too soon. It is a slow method of treatment and if the patient is getting a little better as time goes on, you are justified in keeping it up.

I think Dr. Wainwright's remarks in regard to the goiter of adolescence emphasize the fact that we should do something for these cases. Otherwise, they will go to osteopaths, chiropractors or advertising quacks. When they come in, you should study them thoroughly and decide whether the enlarged thyroid is simply physiological or whether they are suffering from hyperthyroidism, and treat them accordingly.

In regard to Dr. Foss's remarks about my statement that it may be necessary to treat the patient surgically for economic reasons, he misunderstood my line of reasoning. What I was thinking of was that it would take about six months for the patient to recover under radiation treatment and that the patient was practically an invalid for six months. If she cannot stop work for that length of time, she had better have an operation and that will allow her to return to her work more quickly. That brings up a point I mentioned and feel very strongly upon, and that is that cases after operation must continue medical treatment, and that operation does not finish the treatment. I think this is the cause of the recurrences that Dr. Newcomet spoke of. I see these cases right along.

The work of Aub and Means in Boston showed that immediately after operation, the metabolism goes to normal. In a few weeks it goes up again and it is not until about a year and a half after operation that it finally comes back to normal. During this period after operation, the patient should be treated with proper hygiene the same as you would have to treat her if you were using medical treatment alone.

DIFFERENTIAL DIAGNOSIS OF DISEASES OF THE PANCREAS*

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There is no syndrome or symptom complex that is pathognomonic of disease of the pancreas. The proper evaluation of every symptom is important. In the diagnosis of diseases of the pancreas, it is necessary to correlate the symptoms present, the history of the case and the physical findings. By exclusion one condition after another may often be ruled out until the probabilities point to disease of the pancreas. The nature of the disease and whether it is acute, subacute or chronic accounts for the marked difference in the symptoms, whether they are local or general.

In order to appreciate the significance of the symptoms one must always bear in mind that they point either to structural changes in the gland tissue or physiological disturbance. The known etiologic factors must always be kept in mind in attempting to make a diagnosis of diseases of the pancreas. The real nature of the disease found is often diagnosed by the pathologist instead of the clinician or surgeon. The diseases of the pancreas most commonly found are inflammatory and under this head come acute hemorrhagic necrosis, and acute hemorrhagic pancreatitis, gangrene and abscess. These conditions, if all are found, usually occur in the order named. The primary condition is usually an acute pancreatic necrosis due to autodigestion and this is followed by hemorrhage into the necrotic areas. If the patient lives four or five days or long enough for the acute symptoms to subside, gangrene may follow, and if there is an invasion of pus organisms abscess will develop.

The onset of acute hemorrhagic necrosis may be very acute and terminate fatally in a few hours or within four or five days; or it may be subacute and the patient recover in a few weeks. It is believed that many of the milder cases which end in recovery are mistaken for other conditions attended by severe pain in the epigastric region or in the upper part of the abdomen. The diagnosis most frequently made is gall-stone. The most prominent symptom present is pain in the epigastrium. This is usually of sudden onset, very severe, and attended by marked shock. The pain is usually about the midline in the epigastrium, sometimes a little to the left side and a little above the umbilicus. It may radiate into both hypochondriac regions, and it may be severe in the region of the gall-bladder or in the region of the appendix. It may radiate to the left shoulder. Soon the pain beginning in the upper part of the abdomen extends over the whole abdomen. There is usually some tenderness on deep palpation in the beginning of the attack, attended by a sense of deep resistance which extends across the abdomen above the umbilicus. The tenderness soon becomes very much more marked and at the same time there is increased muscular rigidity. This involves at first the upper part of the recti. This may be attended by a sense of rigidity in the lower part of chest and upper part of the abdomen making it impossible for the patient to sit or stand erect or take a deep breath. There is often a peculiar cyanosis of the face, body and extremities which is suggestive of acute hemorrhagic pancreatitis and is regarded as an important symptom.

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The patient lies on the back with knees flexed and finds it impossible to lie on either side or sit or stand, because of a painful sense of tension in the upper part of the abdomen. While the pain and tenderness are at first confined to the upper half of the abdomen, it soon extends, to a lesser degree, over the lower half. Vomiting usually occurs early, but does not give any relief to the suffering. The vomitus often contains bile and at times blood. This may recur and in some cases soon subsides. The temperature may be normal, subnormal or very slightly elevated. There is often decided shock to the nervous system very early in the attack, characterized by tachycardia, cyanosis and weakness—in short the patient seems at once to be very seriously ill.

In the beginning of an attack, if deep palpation is possible, no distinct mass is palpable. A palpable mass, globular in shape, with distinct outline, a little above the umbilicus usually can be made out about the third or fourth day. At times a mass is to be felt first in the left flank and a little later it becomes palpable in the midline, a little above the umbilicus.

When the onset is marked by great muscular rigidity as well as pain, the mass is not palpable until the acute symptoms diminish, which is about the third or fourth day. The bowels, at first, are usually constipated. Enemas, in the beginning of an attack are often ineffectual. After three or four days, the bowels usually move well. At times there is diarrhea and a globular mass is then discovered. As the muscular rigidity subsides, careful palpation will enable one to outline the mass and find it to extend deep into the abdomen. It is not usually movable on palpation, deep breathing or on change of posture. The tumor is apt to be exquisitely tender and may give a sense of tense fluctuation. In a small number of cases there may be jaundice in the early stage of the disease. A symptom complex that points to acute hemorrhagic pancreatitis consists of the sudden onset of severe pain in the epigastrium, muscular rigidity, tenderness on pressure, temperature normal, subnormal or very slightly elevated, pulse not much accelerated, a marked cyanosis of face, trunk, and extremities, dyspnea, weakness, and the patient seemingly very gravely ill. There is usually a moderate leukocytosis.

If after three or four days there is a sudden elevation of temperature (100-104), one may suspect the development of gangrene of the pancreas; and if chills, fever and sweats ensue one may suspect abscess formation. Glycosuria is rarely present. Many of these patients give a history of previously having had attacks of biliary colic, pain in stomach and bowels, nausea and vomiting, or of gastric and intestinal indigestion. Examination of the feces does not aid much in making a diagnosis.

Among the serious complications of acute hemorrhagic pancreatitis, in those who live long enough, are abscess of the omental bursa, thrombosis of the splenic, portal or mesenteric veins, perforation of the stomach, duodenum and colon. Among the acute conditions that may resemble acute hemorrhagic pancreatitis and must be ruled out, are acute intestinal obstruction, simple biliary colic, acute peritonitis due to perforation of gastric or duodenal ulcer and gall-bladder, acute appendicitis and rupture of abdominal aneurism. Before any operation is attempted one must be sure to rule out angina pectoris and angina abdominis.

In acute intestinal obstruction the vomiting is persistent and does not subside, but becomes more and more marked and is attended by increasing exhaustion. This condition is not attended by the marked early shock usually found in acute hemorrhagic pancreatitis. In the latter condition there is no obstruction of the bowels and flatus passes. In intestinal obstruction gases cease to pass. In intestinal obstruction there is visible peristalsis, with distension above the point of obstruction. The marked early symptoms of shock to the nervous system are lacking in intestinal obstruction and develop later in the disease. In localized peritonitis, due to perforation of gastric and duodenal ulcer, there is the history of pain occurring with regularity after meals, often for a long period. A reliable diagnosis of gastric or duodenal ulcer may have been made previously.

In biliary colic we have the history of pain in the region of the gall-bladder, pain radiating to the right shoulder, and of colic at irregular intervals, often followed by tenderness along the right costal border, slight fever and jaundice which disappears in a short time, also a history of recurring deep tenderness over the region of the gall-bladder and recurring jaundice. There is no such marked shock to the nervous system as is found in a typical case of acute hemorrhagic pancreatitis. The pain of acute hemorrhagic pancreatitis does not radiate to the right shoulder but may radiate to the left.

In acute cholecystitis, the pain may be severe and the tenderness more circumscribed and limited to the region of the gall-bladder. Soon, however, the infection may cause a localized peritonitis with increased tenderness and muscular rigidity and in case of perforation there may be evidence of a very rapidly spreading peritonitis. There would likely be more fever and a more rapid pulse in acute cholecystitis, and less cyanosis than in acute hemorrhagic pancreatitis.

In acute appendicitis it seems the pain may be almost anywhere in the abdomen and often very general with general abdominal spasm, but soon the pain and muscle spasm become localized to the region of the appendix. Early in the affection deep palpation will usually elicit deep and acute tenderness over the region of the appendix. A digital examination of the rectum will often help to confirm the diagnosis of appendicitis by finding very acute tenderness high up in the region of the appendix, and no tenderness or very little in the left side. This I have found of assistance when there is general muscular rigidity, interfering with deep external palpation, or when the muscles are relaxed as they sometimes are in tuberculous appendicitis. One must not mistake a gastric crisis for acute hemorrhagic pancreatitis. A careful history, examination of the pupillary and deep reflexes should enable one to rule this out. One must rule out a possible angina pectoris or abdominis before attempting an operation.

It is only in typical attacks of acute hemorrhagic pancreatitis that one is usually able to make a diagnosis, but inasmuch as many of the conditions that simulate it require surgical intervention, the all important work for the clinician is to determine the propriety and necessity for timely surgical intervention to save the patient's life, no matter what the condition is that may be found.

We now do know that there are rather frequent attacks of subacute hemorrhagic pancreatitis which do not require operation and from which patients do recover. These cases are frequently diagnosed as cases of gall-stone. A subsequent operation for gall-stones often reveals the absence of gall-stones or of any previous disease of the gall-bladder or bile ducts, and to the operator's surprise he finds areas of fat necrosis which are pathognomonic of acute pancreatitis.

The symptomatology indicative of chronic indurative pancreatitis is usually the same as that indicating the conditions which cause chronic obstruction of the pancreatic duct or chronic infection of the gland. An accurate diagnosis of this condition is seldom made by the clinician. A diagnosis of pancreatic insufficiency is at times simple, but to determine the cause of this condition is a different problem. An underlying atherosclerosis of the vessels of the pancreas may be suspected when there is evidence of pancreatic insufficiency without other discoverable cause and when there is evidence of marked arteriosclerosis elsewhere and especially when attended by marked hypertension. Associated conditions sometimes found are small granular kidneys and cirrhosis of the liver. Pancreatic apoplexy is now believed to be due to this condition, the same as cerebral apoplexy, and occurs rather a little after middle life; whereas acute hemorrhagic pancreatitis is most common between the ages of thirty (30) and fifty (50).

Pancreatic insufficiency is indicated by steatorrhea and creatorrhea when the external secretion is deficient, and by diabetes mellitus when there is degeneration or destruction of the islands of Langerhans.

The following cases suggested to me the propriety of selecting this subject for a paper:

CASE I

Mrs. G. H., age 34, American, white, occupation housework. Family history: Negative. Personal history: She had the usual infectious diseases of childhood and diphtheria at four years of age. She was well since a child except slight colds in the head and constipation requiring a mild laxative once or twice a week.

Present Illness: While apparently in perfect health she was suddenly seized with a sharp pain in the epigastric region which disappeared in a few minutes. A few hours later the pain recurred in the same region and rapidly became worse. There was, at the same time, a sense of constriction around the lower part of the chest and upper part of the abdomen, so that she was unable to take a deep breath. There was also some rigidity in the recti, causing her to bend forward. The pain in the epigastrium and muscular rigidity increased so that in a few hours she was compelled to lie on her back with knees flexed on the abdomen.

A few hours after the onset of pain the patient became nauseated and felt very sick. The pain was very severe in the upper half of the abdomen, which was also tense and very tender. Gradually the lower half of the abdomen became involved, but the pain, tenderness and muscle spasm were less marked than in the upper half. The pain required a hypodermic and she was given morphin grain 1/4 with atropin grain 1/150. This gave the patient partial relief. During the first night the patient vomited once quite freely without any relief. The muscular rigidity continued uninfluenced by the morphin. There was no evidence of diaphragmatic breathing. The patient remained constantly on the back with knees flexed. The abdomen was slightly distended. There was slight elevation of temperature, never much fever, and the pulse only slightly accelerated. Leukocytes 12,000 and urine was negative.

Hot stupes to the abdomen were soothing. There was no nausea after the first day. At no time was there any evidence of special tenderness over the region of the appendix or gall-bladder. On the third day the acute tenderness began to subside but there was still exquisite tenderness over the epigastric region. Breathing was upper costal. At the end of the third day the patient's general condition was better, abdomen less tense and tenderness almost limited to the epigastrium. Now for the first I found a globular mass, having a smooth surface and with distinct outline a little above the umbilicus. It seemed to be about three inches in diameter. The mass was exquisitely tender. On careful palpation it seemed to extend deep into the abdomen. Two surgeons were called in on the case. The conclusion reached was that the mass was inflammatory. At this time, the patient's general condition and the local symptoms had improved and it was deemed inadvisable to operate. The patient made a final recovery. In a few weeks all tenderness was gone and no evidence of a mass could be found. The final conclusion reached was that it was a case of acute hemorrhagic pancreatitis.

CASE 2

Mrs. J. M., age 45, American, white, occupation housework. Called at my office October 27, 1921. Her chief complaint was pain in the back, loss in weight and weakness.

Family history: Parents living. Father is well; mother has heart trouble. Both are 73 years of age. One brother died at 33 of apoplexy. One sister died of diphtheria. She gave no history of tuberculosis. Bright's disease, cancer, mental or nervous disease in the family.

Personal history: She had scarlet fever, diphtheria, measles, mumps, whooping cough and pneumonia as a child. She had tonsillitis and la grippe a few times. Last illness and attack of the latter disease 6 years ago. She went through one pregnancy and was delivered with forceps 18 years ago. She made a slow but complete recovery. Menstruation normal at present.

Present illness: She seemed to be perfectly well until two months ago when, in apparently perfect health, she was taken with a sharp pain in her back, a little worse on the right side. In a few hours, the pain subsided. About one week later the pain recurred in the same region. She was confined to bed for a few days, when the pain had largely subsided, though a soreness continued.

The pain and soreness radiated around the lower part of chest and upper part of the abdomen, worse on the right side. She soon discovered that she suffered more when lying on the back and was much relieved by sitting or standing.

Her appetite continued good, there was no distress after meals and her bowels were regular. She noticed nothing abnormal in the stools. About two months after the onset of pain, she discovered that she had lost in weight to the extent of 18 pounds. She then came to my office.

Physical examination: Color slightly pale, no jaundice. There was slight emaciation. Eyes, ears, nose and mouth normal. Teeth well preserved. No struma, and no enlarged glands found anywhere. Lungs clear, heart normal. No evidence of arteriosclerosis. Pupillary and deep reflexes present. Abdomen negative, except a mass in the epigastric region. Rectum and pelvic cavity negative.

A little above the umbilicus I found a globular mass almost in the midline. It was about 3½ inches in diameter. It was smooth, regular and distinct in outline, not tender except on deep palpation, and it could easily be determined that it extended deep into the abdomen. It was not movable on palpation, respiration or change of posture. It felt as if there was tense fluctuation. The larger portion of the mass was to the right of the median line. There was no free fluid in the peritoneal cavity. There were no dilated veins on the abdomen, no hemorrhoids, no edema of lower extremities, no jaundice, no evidence of pyloric or duodenal obstruction. There was no pulsation or bruit in the mass. There was no sensory disturbance in the corresponding skin fields. Her temperature ranged from normal to 99 1/2, pulse 84-108, respirations 20-28.

Leukocytes 10,500, polys. 68%, lympho. 22%, mono. 6% and eosin. 4%.

Urine was pale amber, acid, spec. grav. 1010 and examination for albumin and sugar was negative. The sediment contained epithelial cells and few leukocytes. There were no red cells, no casts. There was evidently no pressure on the renal veins. Gastric contents normal, feces normal, Wassermann negative.

X-ray examination of abdomen: Stomach was normal in size, shape, position and outline. The duodenal cap was irregular, probably due to pressure.

Intestines revealed nothing abnormal except ptosis of transverse colon. There was a faintly visible shadow suggestive of a mass in the upper part of the abdomen.

I felt I could exclude the stomach, bowels, liver, gall-bladder, bile ducts, kidney, but I could not exclude the pancreas nor retroperitoneal new growth. I ventured the diagnosis of pancreatic cyst. At operation it proved to be sarcoma of the pancreas.

These two cases had one feature in common—a globular mass, smooth surface, regular and distinct outline in the same region. The one was attended by acute symptoms, sudden onset and disappeared in a few weeks. The other case was of gradual onset and development, no acute symptoms and a progressively downward course.

The moment I dismissed the first one I encountered the second. The pathologist diagnosed the second; the diagnosis of the first was only a venture, but I am glad to report that the patient is well although she had one hint of pain in the same region a few months ago.

DISCUSSION

Dr. **Elmer H. Funk** (Philadelphia, Pa.): Dr. Holtzapple's paper is timely in that it calls attention to the need of constantly keeping in mind the rôle of pancreatic lesions in all acute and obscure abdominal lesions. The pathologist and the surgeon have taught us that pancreatic lesions are not uncommon. One of my pathologist friends told me yesterday of the finding of two cases of acute hemorrhagic pancreatitis among a recent series of 112 necropsies, the pancreatic lesion having been unsuspected during life. This, I venture to say, is not an unique experience. Unfortunately the pancreatic syndrome is not clear cut. Wardell as long ago as 1871 put it tersely when he said that "no symptoms are pathognomonic of pancreatic disease; an assemblage of symptoms indicates the probability of its lesions." And these words hold true to-day. The surgeon, by the aid of "exploratory incision" wisely performed, has been a help in the diagnosis of many cases.

I cannot add anything to what has been said with regard to the acute cases, the symptomatology and diagnosis of which have been so clearly stated by Dr. Holtzapple. I do wish, however, to add a word with regard to the less acute pancreatic lesions which, often insidious in their onset and obscure in their manifestations, are ultimately a far greater cause of human suffering than the acute lesions. Whether we accept Mauquet's theory of pancreatic lymphangitis or Opie's views in regard to the influence of retrojection of altered bile, or both, the fact remains that lesions of the pancreas are in many instances related to infections of the biliary apparatus. The presence of known biliary tract infection, therefore, ought to direct our minds toward the possibility of pancreatic disease. The same may be said with regard to other upper abdominal diseases; for example, peptic ulcer. It is quite true that the pancreatic involvement may be slight, but it may, however, be sufficient to obscure the clinical picture presented by these other diseases. Lack of improvement following the treatment of these other conditions may be due to a permanently damaged pancreas. Although it is not strictly within the province of this discussion to consider treatment, it is trite to recall that the correction of extrapancreatic upper abdominal disease will go a long way toward preventing serious pancreatic complications.

As an example of an obscure complaint of pancreatic origin, one might point to the case report in the current issue of the *Lancet* by Dr. Lindsay. The patient had had colicky pains in the upper abdomen for fifteen years. During the past two years pain had increased and loss of weight had become evident. The abdominal examination was found to be normal. At operation chronic calculous pancreatitis was found. The stones were removed and the patient recovered. Lindsay points out that there are two groups of patients with pancreatic calculi. One is exemplified by the case quoted and in the second group the disorganization of the gland proceeds till its disordered functions is evidenced in glycosuria, pancreatic stools, persistent dyspepsia, and in some cases interference with the bile-ducts.

We know little of the pancreatic lesions associated with the acute infectious diseases. The deep-seated upper abdominal tenderness found occasionally in patients with mumps would indicate an involvement in this disease.

Cancer of the pancreas is, as a rule, inoperable when the symptoms and signs point to the diagnosis. Futcher collected 58 cases of pancreatic cancer among 41,000 patients admitted to the Johns Hopkins Hospital; 38 were confirmed by operation or necropsy and of these 8 were primary. Males past middle life, with obscure symptoms referable to the upper abdomen, call for a special consideration of pancreatic cancer and early exploration by a competent surgeon is advised.

Time will not permit more than casual reference to the various laboratory tests—the study of the enzymatic activities of the duodenal contents, the diastase test, Loewi's test, etc. Many tests have been advocated, but most of them are surrounded by considerable uncertainty. As Garrod has stated, "none is to be looked to for a penny-in-the-slot diagnosis." The laboratory tests are a bit of evidence and not a verdict. The most valuable findings are true steatorrhea and creatorrhea. When these are both present we have formidable evidence—and Garrod would say well nigh conclusive evidence—of pancreatic disorder. Both the external and internal secretions of the pancreas take part in the utilization of the fats, the former being concerned with fat splitting and the latter with fat absorption. When in addition to impairment of fat digestion and absorption there is creatorrhea—the simplest test of which is the recognition of striped muscle fibers in the feces—a pancreatic lesion is most probably present.

In conclusion, I wish to express an appreciation of Dr. Holtzapple's paper which I am sure will serve as a reminder to all of us that pancreatic lesions will be recognized more frequently if we will but bear them in mind in the study of our patients. The diagnosis must in most instances, however, rest upon circumstantial rather than direct evidence.

Dr. W. W. G. Maclachlan (Pittsburgh, Pa.): I am afraid I have very little to add to the very complete summary of pancreatic conditions presented by Dr. Holtzapple.

There is one thing that has struck me in seeing pancreatic cases that have died, and that have been proved to be pancreatic cases by finding lesions in the pancreas in postmortem examination. In acute types, the presence of intense abdominal pain has been somewhat of definite importance in diagnosis, and in neoplasms (cancer at the head of the pancreas) having a resemblance to cancer of the gall-bladder, the jaundice, which is usually present at first, tends to clear up, although not completely, as the case advances. It is our impression that the jaundice caused by neoplasms of the biliary tract increases.

Dr. Lawrence Litchfield (Pittsburgh, Pa.): Dr. Holtzapple and Dr. Funk have left nothing to be said as to diagnosis, but this is a most interesting and serious condition. Dr. Archibald, of Montreal, has published a number of articles on the connection of pancreatic disease with the biliary duct, with its small sphincter muscle, which may be thrown into spasm under different conditions. Of course you know that pancreatic cysts generally contain bile. Archibald mentioned a case to me—which he may have published—in which the appearance of glycosuria in one of these cases of doubtful diagnosis led them to suspect that bile had been forced into and damaged the pancreas. They made an exploratory operation, after repeated attacks had been diagnosed as gall-bladder disease. The operation relieved the condition, the glycosuria disappeared and the patient made a complete recovery.

The important fact from the patient's point of view perhaps is that the diagnosis of pancreatic disease is a *tour de force*, an exhibition of great skill on the part of the clinician; but after all the only absolute diagnosis of pancreatic diseases is by operation, either ante- or postmortem. I do not feel that any case should be diagnosed as malignant disease of the pancreas, or of the gall-bladder for that matter, and the patient be condemned to the slow death which will probably occur without an exploratory operation.

One of the most difficult questions to decide is the matter of our responsibility in these acute cases—to decide whether or not we can safely wait for further developments before operating. Is there enough evidence to justify us in feeling that it is safe for us to wait for the acute symptoms to subside? The vital question from the patient's point of view is not what is the exact diagnosis, but what is likely to occur if an exploratory operation is not performed.

I feel more and more of the opinion that there is great danger in getting too much confidence in our diagnoses, and not considering these cases sufficiently from the patient's standpoint. An exploratory operation in the proper hands is a trifle as compared to the risk from neglect of the same.

Dr. Truman G. Schnabel (Philadelphia, Pa.): There is only one particular phase of the pancreas question that I should like to say something about, and that concerns itself with the value of examination for the presence of pancreatic enzymes in the duodenal contents. Usually one or all of the enzymes are present, even when well advanced pathology exists in the pancreas, and when they are permanently absent the feces tell the story very certainly. Qualitative determinations have proved of value in our experience, while quantitative determinations have been of little help.

Recently we had an opportunity to examine two patients with very clear-cut gall-bladder disease attacks. There was in both cases some jaundice, some sugar in the urine, with transverse upper abdominal pain and tenderness in the costal vertebral angles. This seemed to make for a pancreatic diagnosis. In these cases the enzymic activity seemed to be more intense than is usual.

Dr. Alexander Armstrong (White Haven, Pa.): I have two questions to ask. As I remember the early teaching in pancreatic disease, one thing was taught—to look for sugar. Since this occurred in neither of Dr. Holtzapple's cases and in his description he said that it was rarely found, I should like to know whether this point has been positively cleared up or whether it was a mistake in our early teaching.

The second question is whether, if we do an operation, it should be done post-peritoneally. I should like to know if that is still in order.

Dr. J. I. Johnston (Pittsburgh, Pa.): I cannot add anything different to what has been said. Doctor Litchfield noted a very important thing—that in doubtful cases, especially in acute ones, the abdomen should be opened and the trouble looked for. I believe rather more than the essayist has said, the question of acute perforation and peptic ulcer would have to be stressed still further. However, any conclusion is very difficult. I think the most important thing in acute hemorrhagic pancreatitis is that the patient should have the benefit of an operation for exploration.

Dr. Irwin J. Moyer (Pittsburgh, Pa.): I just wish to mention a case of acute pancreatitis. Several years ago a young fellow, twenty-eight years of age, a thrifty, healthy young fellow, although careless about his eating, came to us. We suspected gastric ulcer. Otherwise he seemed to be perfectly normal.

He was taken sick suddenly with intense pain in the epigastric region. There was no edema or tumor; nothing could be palpated. There were three things, intense pain, rapidity of progress and intense prostration. The pain was out of all proportion to the tenderness. It was not distinctly of the type of gastric ulcer. The pain was not localized. The condition of the vomited material made us suspicious of gastric ulcer. We were at a loss what to do and the disease progressed so rapidly that the patient died five days after the attack began. At no time were we satisfied that operative procedure would do any good. He died and in the postmortem examination we found an intense inflammatory condition that began with the pancreas.

Dr. Holtzapple (in closing): The question was asked whether sugar was present in these cases as a usual thing. It is not present as a usual thing in acute cases. It is never present unless the islands of Langerhans are involved.

In reply to the question as to whether the anterior or post-peritoneal route is employed at operation, the anterior operation is usually resorted to.

The point that I wish to emphasize in this paper is that the medical man should have as complete a knowledge of the symptoms of this condition as the surgeon has of his technique when he operates on these cases.

THE ETIOLOGY OF UVEITIS*

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The term "Uveitis" will be used, in this discussion, to imply an inflammatory process in any part of the uveal tract. While it is convenient to describe and classify iritis, cyclitis and choroiditis as separate diseases, in clinical practice one must remember that each is a form of uveitis and that there is likely to be accompanying it inflammation of other portions of the tract. It is, in effect, an endophthalmia. The important practical point to be observed is that when inflammation seriously attacks one part of the uveal tract, other parts do not entirely escape, although it does sometimes remain confined to the part first attacked. The particular affection with which this discussion is intended to deal commences, clinically, most usually in the iris and less commonly in the ciliary body, insidiously with little or no signs of inflammation, and continues indefinitely, even for months or years; or, in other cases, with severe signs of inflammation appearing late in the course. By some it is spoken of as iridocyclitis, and by others as "chronic uveitis."

The affection of the individual component of the uveal tract may be considered as either primary, when the original site of the disease is in the iris or in the ciliary body; or, secondary, when an affection of neighboring parts has been transmitted to the iris or ciliary body, as in iritis with ulcer of the cornea. As far as our general information goes, every case of uveitis may be said to be of septic or of toxic origin, although many cases of septic foci are not accompanied by iritis. Indeed, the iris does not seem to be readily accessible to microbic invasion following injuries to distant parts of the body.

The characteristic exudate in chronic uveitis is the deposit of true precipitates on the posterior surface of the cornea, in the aqueous and into the vitreous, consisting of circumscribed, compact, spherical, cellular masses which enclose large nuclei. The cells may arise from the iris, the anterior portion of the ciliary body and possibly from the posterior portion. Pain may be absent when the choroid is the part chiefly affected, because of the absence of the sensory nerves in that portion of the tract. The course of the disease varies. In some cases there may be a single attack with early and complete recovery; in others, as those of the "confirmed rheumatic habit," who suffer exceedingly from one or more attacks every year, each attack leaves the eye in a worse state; in others the poison acts with malignant virulence; and in still others blindness in one eye or both immediately supervenes, while others go on to destructive sympathetic ophthalmitis.

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The origin of the affection is either exogenous or endogenous, although one must admit that, even by the elaborate and illuminating methods of examination now available, some cases must be regarded as nonbacterial in origin; yet, with few exceptions uveitis or iridocyclitis is not an isolated ocular disease but depends for its development upon microörganisms and their toxins. The symptoms are usually the local manifestations of systemic infection, and may be compared in their elemental aspects to the various connective tissue, muscular and synovial membrane affections. In general terms, as there is a proliferation of the ciliary epithelium, it is probable that the toxic principle acts on the surfaces of the iris and of the ciliary body. The poison, therefore, must be present in the aqueous humor, which it has reached through the blood stream, having been derived from the body fluids as the result of general or organic tissue disease.

Chronic iridocyclitis, as comprehended by our definition, in my own experience certainly has been as uncommon during the first fifteen years of life as during extreme old age. It has been met most commonly between the twentieth and the fortieth years. And it seems to be more common in young women, or in women of middle age or older, than in men. It is more than likely that climate has a distinct influence as an exciting etiologic factor, as more cases have been reported from northern observers than by those in warmer regions, and more during damp seasons than in dry.

The statistics of the frequency of primary uveitis among all classes of ocular disease varies considerably from one per cent. to three per cent. In the great majority of cases the infection is unilateral. Bilateral cases do occur, but commonly such instances are not synchronous in their onset. In my own experience, as my memory recalled case after case during the preparation of this essay, one eye only has been involved, even in the cases manifesting violent recurrences.

We will not consider cases of iridocyclitis resulting from a wound of the corneosclera, nor from the toxemia derived from such wounds, but those cases dependent upon certain of the infectious diseases (excluding tuberculosis and syphilis), of certain internal areas of suppuration and of certain disturbances of metabolism. As ascertained by modern diagnostic aids, the most important factors tending to produce uveitis have been tuberculosis, syphilis, and gonorrhea; rheumatism, and gout, which are steadily being credited with a dependence upon focal infections; the acute infectious diseases such as diphtheria, pneumonia, influenza, epidemic meningitis, malaria, etc.

The association of uveitis, of the type we are here considering, with acute rheumatic fever must be extremely rare. Indeed it might be said practically never to occur; and yet the fact must not be overlooked that purulent matter, streptococci and staphylococci, might, by metastasis, lodge in the globe. In the course of chronic rheumatism, polyarthritis, and more rarely arthritis deformans, iritis does not set in until after the rheumatic arthritis has existed for years.

The etiologic connection between iritis, cyclitis, or iridochoroiditis and muscular rheumatism, the various types of myalgia and polyarthritis is of doubtful importance. It might seem wise, therefore, to discontinue the term "rheumatic" iritis, or iridocyclitis, etc.; and yet, as no satisfactory appellative has been suggested, it is recommended that the term be retained because everyone knows what is meant by its use. It is to be noted, however, that in recent years the search for focal infections throughout the body has been followed by such fruitful results as greatly to have reduced the number of cases ascribed to rheumatism. The so-called rheumatoid forms of uveitis are really manifestations of a toxemia, the nature of which is not yet understood, and the symptoms are but a localized expression of the cause operating throughout the body.

In regard to arthritis, or at least to arthritic pains, iritis may have been found associated, and it is to be noted that the association may be so marked that the increase in the joint symptoms and the excess of the iritic may occur synchronously. Doubtless the same cause which creates the joint affection gives rise to the uveitis, although that cause has not yet been revealed; and, while there may be no visible evidence that these cases have been rheumatic, in my experience they have reacted generally as well as locally to the benefits of the salicylates. Accordingly, it may be accepted as true that affections of the anterior segment of the globe, occurring in the subjects of the various forms of polyarthritis and muscular rheumatism, are but additional manifestations of the same infection or toxemia which causes the muscular and fibrous tissue pains and lesions. On the other hand, in the absence of definite knowledge concerning the pathogenesis of rheumatism, a more explicit statement as to its causation, the causation of the vital involvement, cannot be made. Rheumatism and rheumatoid diathesis are terms so loosely applied that all forms of septic absorption have been called rheumatic. Just here it might be noted, that while a generalized septic absorption from external necrosis is capable of producing iritis, it does not as a rule produce rheumatism.

Gout: It is rare that one nowadays sees the typical gout so frequently recorded by the practitioners of a previous generation. It is many a day since I have seen any of my elderly friends, rich or poor, in his easy chair with his foot swathed in bandages and propped up on a special foot rest. One finds such extraordinary pieces of furniture deposited in museums of old-time things in increasing number. And, yet the idea is held by practitioners of wide private experience that there is some relation existing between bodily gout and the various affections of the uveal tract with which the victims of that disease are sometimes seized. Nevertheless, because of the mysteriousness of gout, thinking men are inclined to believe that that which has caused the general disease is at the bottom of the affection of the eye also. Still it remains in the minds of many that iridocyclitis in the gouty might, in all likelihood, be caused by, or at least be associated with, the defective nitrogenous metabolism which underlies gout.

Causation of Rheumatism and Gout: The belief that rheumatism and gout are produced by infection rather than by the malassimilation of protein compounds from the food, from which uric acid is produced, has been gaining ground in the minds of pathologists. Besides the fact that uric acid is a normal constituent of the blood, it has been ascertained that the amount is but slightly increased during gout. The deposition of it does not take place until after inflammation, the result of infection with its attendant toxins, has occurred. Instances have been observed of recovery from typical gout, often of long duration, consequent to the removal of foci of infection, as in the teeth and tonsils. So also in rheumatism, bacteria from a focus of infection are disseminated throughout the body in the blood stream, clumps of which block the small vessels about the joints—the joints themselves and the surrounding tissues being involved to greater or lesser degree according to the degree of infection and the virulence of the organisms. Such conditions interfere with the local blood supply and the nutrition of the infected tissues, and the conditions may be aggravated by general malnutrition and loss of tone in the circulatory system. Such, therefore, may be the case when the circulation in the region of the angle at the corneosclera is involved. The effect of colchicum, a remedy which has stood the test of the ages, is not so much that of a specific, as it is that of an accelerator of the circulation, and through the action of that valuable remedy infection is combated because of the increase of white blood cells which are thus brought to the parts affected.

Be all this as it may, we all know of men, and women too, of the full habit, and commonly beyond forty years of age who rather enjoy telling us that they are gouty, as were their fathers before them, who, after a period of unusual eye-strain, or after receiving a slight traumatism, are attacked acutely by the old-fashioned "hot eye." Such cases should always be kept under observation, and it is good practice to remind the individuals that they are "gouty" and insist on their reporting at short intervals for the reviewing of their refraction. And, I need not before this audience dwell long on the thought of the association of glaucoma with gout.

Gonorrhea: Many of the cases ordinarily classified as rheumatic are in reality gonorrheal. The iritis commonly seen in young persons and in early adult life is in many cases dependent upon the gonococcus. One should always bear in mind the possibility of such a cause in the cases of chronic insidious uveitis as it occurs in women; and it would be well to regard relapses of acute serous iritis as attributable to genital blenorrhea, even in persons who have not presented such a history. Gonorrheal iritis is probably not as frequent in private as in hospital practice, yet, because of the extraordinary vitality of the gonococcus which enables it to generate toxins long after the blenorrhea has subsided, it is likely that careful search in cases of baffling uveitis will yield a greater number. Such cases of iritis might be greatly benefited by the treatment of the urethra and other mucous surfaces.

The involvement of the uveal tissues does not usually take place until the active symptoms of the blenorrhea are subsiding. Occasionally at about the time of the onset of the ocular symptoms there may be swelling of the joints and great congestion of the conjunctiva with profuse exudation into the aqueous, sore throat from active tonsillitis, and swelling of the testicles. Such symptoms are undoubtedly dependent upon the extension of the gonorrheal infection.

Moreover, many cases of chronic iridocyclitis accompanied by exudation into the anterior chamber will be found to be of a gonorrheal origin. All other causes being considered, most certainly the gonococcus cannot be excluded from the list of active factors in uveal disease.

Diabetes: It has been my experience to have observed more or less intimately a somewhat large number of diabetics, and yet I cannot recall a case of the so-called diabetic iritis. My private records certainly contain none. Cases supposedly diabetic have been seen in the clinics, yet the relationship of the iritis to the general ill health of the persons was not satisfactorily worked out. The records available have yielded me inconclusive results, and I mention the affection only to include it among the dycrasias which it is believed can and have produced inflammation of the uvea. The formation of boils and carbuncles recurring so frequently in some diabetics may be reasonably considered to be of an infectious nature, and as such may be accepted as the explanation of the occurrence of the iritis; and yet, these two so diverse symptoms might very well be expressions of a common infection. Although iritis must be a most rare complex, at all events, just as in the case of gout, we are not unconvinced that the same cause which excited the defective nitrogenous metabolism and produced the diabetes may not also produce nonbacterial inflammation of the uveal tract.

It is interesting to note, in considering the subject of ocular diabetes, with what rapidity surgical operations on the globes of adult persons who are afterwards discovered to be diabetic, are followed by malignant inflammation of the uveal tissues.

As has been already expressed, the evidence, clinical and bacteriological is in favor of the idea that the majority of cases of uveitis are caused by microörganisms or their toxins. The staphylococcus, as well as the gonococcus, bears a large part in the infections of the iris and ciliary body. The most frequent sources from which the staphylococcus reaches the uveal tract are: chronic septic processes in the mouth (as from pyorrhea alveolaris), in the tonsil, in the nasopharynx, in the accessory nasal sinuses, in the intestines (as from chronic appendicitis), in the uterine cavity, in the skin, and from boils and furuncles.

Pyorrhea Alveolaris: Lawford and Lang, by their independent investigations several years ago, presented conclusive evidence of the dependence of uveitis on pyorrhea alveolaris, the reason for which, it would seem, being the great prevalence of pyorrhea, and also that infection from these cases may be presumed to be direct into the circulation.

There might be said to be seen two types of uveitis dependent upon dental infection. The first is an acute iritis with extension to the ciliary body, accompanied by intense exudation into the tissues and clouding of the sight. Individuals thus affected usually have bad and decayed teeth, and their mouths harbor virulent organisms in great abundance. The other type is seen usually in the cleanly, whose teeth are carefully inspected and treated by their dentists, who doubt the presence of deeper troubles until radiographic examinations disclose apical abscesses and gingival inflammations, the organisms from which possess a weaker virulence than those found in the other class. No specific type of infection appears to act as the causative agent, though usually when the uvea is involved there is a low grade chronic inflammation, which requires radiological study for the determination of the situation of it. This class presents a chronic uveitis confined to the iris with little or no tendency to exudation. The ocular condition may endure for years, at no time affected by any great loss of vision, being marked by relapses and healing after simple treatment.

The groups are found perhaps twice as frequently in women as in men. When the cases are treated early they improve rapidly. The extraction of loose and of impacted teeth will almost miraculously relieve an attack of iridocyclitis which has resisted all other measures. I would call attention to the viciousnes of certain rather popular dental practices. In my experience in these classes of uveodental disease, numerous subjects have had their teeth roots crowned. and many wore bridge prostheses anchored to devitalized and banded stumps. In another group have been those who had had artificial teeth pegged into excavated and bored roots. Neither of these is to be included in those with old broken and buried roots.

The subject of the effect of alveolar disease has assumed such prominence that one unfamiliar with the literature might regard it as a recent discovery. It is well that it has assumed such an importance, for only by that are we able to convince our patients of the necessity of sacrificing their old fangs. It is refreshing to note the modesty of MacKenzie, who so far back as 1845 quietly stated, in his chapters on uveal disease, that "the irritation of a decayed tooth, or stump, communicated through the fifth nerve to the brain, and thence by reflection to the eye, has produced the disease." And again, "In one case which I saw, the irritation arising from a decayed tooth seemed the cause. The disease declined rapidly after extraction of the tooth."

One might wish to digress for a moment to inquire further into the origin of the pyorrhea and the association of iridocyclitis with it. It must be admitted that the character of the present day food certainly favors dental decay. The chewing of hard and tough fibrous masses tends to stiffen, while soft starchy and sticky food, requiring no mastication, surely relaxes the tissues in the dental sulcus, and decay ensues. Carious and dead teeth are always septic, and as the dental sulci are difficult to drain, morbid particles enter into the surrounding tissues and from thence are propelled into the general circulation, through either the vascular or the lymphatic system.

Tonsils: The association of chronic arthritis with septic infection of the tonsils is now so well known and so sufficiently understood that I need not make more than a reference to it and to ascribe a given case of uveitis to an affectation of the tonsils; for next to pyorrhea alveolaris and perhaps of equal if not greater frequency as a source of origin of iridocyclitis, is chronic inflammation of the tonsils. The process may be identical with that occasioned by pyorrhea. Infectious organisms retained in the crypts of the hypertrophied tonsil excite ulceration, and on being cast off, fragments of highly septic material are absorbed into the blood stream and carried hence to lodge in, it may be, the thyroid, the joints, the appendix, the endocardium, etc. Repeated absorption of more or less attenuated septic fluid, by and by culminates, it may be believed, in inflammation of the iris, the choroid or the sclera. The tonsils and the lympathic pharyngeal ring, therefore, should be investigated in the management of every case of acute and chronic uveal disease.

Intestinal: It has been maintained, even in quite recent years that intestinal auto-intoxication may be largely responsible for many cases of ill health. Also, if, in the course of a vague intestinal trouble, an ocular affection arises, and indican is found in excess, the eye disease, in all likelihood, may be ascribed to such an auto-intoxication. In the researches into the effects of pyorrhea alveolaris it has been noted that affections of the teeth frequently produce disorders of digestion. In cases of uveitis, regarded as dependent upon the absorption of toxins from the intestinal tract, the intestinal contents have been found to be highly acid, the colon bacillus absent, or present in small numbers only, the other organisms Gram-positive in character. Indol and skatol, however, were present in large quantities and in the urine indican to quite a high percentage. That cases do not arise more frequently from alimentary toxemia is due doubtless to the fact that the toxins "undergo the ordeal of the hepatic furnace." It is, however, not to be denied that certain cases are truly intestinal in origin, from an actual focus residing somewhere in that system; for if after a most thorough exploration no focus can be found in the teeth and the tonsils and the case fails to improve under treatment some such focus might readily be suspected, especially if after every indiscretion in diet relapses of an outbreak of serous iritis with an eruption of urticaria follow. Such persons in all probability exhibit an idiosyncracy manifected as a protein sensitization for certain ingested foods.

It is incumbent upon us, when consulted in cases in which indicanuria is a prominent factor, to ascertain the exact state of the dental bodies, because the eye and the intestinal tract might be affected from a common source; moreover, a case of uveitis of dental origin might readily become aggravated by intestinal intoxication.

General Disease: Many diseases and conditions have been brought into etiologic relationship with various types of iridocyclitis, notably the infectious diseases and the exanthemata. With the possibilities of focal infections before us it is difficult to ascribe inflammations of the uveal tract to the specific organisms known to excite the general infectious diseases, excluding of course from this discussion syphilis and tuberculosis.

Few general diseases are without pharyngeal symptoms; and, as dental, rhinopharyngeal and tonsillar infections are so common, it is all the more difficult to decide against the probability that the general disease has aroused a latent focal infection and thus produced the inflammation of the uveal tissues. Such reasoning might very well be applied in the explanation of the occurrence of iridocyclitis in the course of the epidemic diseases notwithstanding the fact that the meningococcus has been found in the lacrimal secretion and in the tissues as well as in the aqueous exudate in cerebrospinal meningitis. And it is this thought which one might hold in reference to malaria; most certainly so in influenza and parotitis. Uveitis has been noted as having occurred in the course of malaria. A number of years ago, I reported a case of marked iritis in a boy who had long been affected by malaria. And yet, the evidence is quite inconclusive that the action of the malarial organism, alone, has produced iridocyclitis. It is indeed a rare complication. So also might one speak of dysentery which, it is true, is an amebic infection by the bacillus dysenteriae. It might be likened to rheumatism, gout and gonorrhea, in that there are often joint involvements and in the course of which iridocyclitis sometimes become manifest.

It has been assumed by Leber, and others, that an association exists between renal disease and iridocyclitis; and yet, it is indeed so rare that in de Schweinitz's collective investigation only four cases were found.

It will be seen how great is the value of a thorough search for focal infections in the nose and its accessory sinuses, in the tonsils, the buccal mucous surfaces (especially about the roots of the teeth), and the skin, in the pelvic organs (particularly when the uvea is affected during the puerperal state), and in the prostatic and seminal vesicles; also for the origins of gastro-intestinal intoxications.

Remarks, General Pathological: Investigation into the causes underlying the inflammation of the uveal tract, according to Byers, resolves itself into a search for: first, some systemic disorder of which the ocular disturbance is but an expression, as in syphilis and tuberculosis; second, some focus or foci of infection originating the uveitis by means of metastasis. And yet, as de Schweinitz has pointed out, a syphilitic might have a septic area which might not be of specific origin. Further, in the presence of a focal infection the examinations must include those which determine whether or not there is a general infection also; and if, on the removal of one focus, symptoms continue, search must be made for the likelihood of another.

The Pathogenesis of Bacterial Uveitis: It is pertinent to inquire by what pathways infection is transferred to the eye from the foci we have been considering. Anatomically and physiologically it does not appear possible that an infection can spread through the lymph channels. And yet, it is to be noted that dental suppuration is found on the same side as the eye affected; only occasionally (indeed rarely) is it bilateral. Might not the observance of this disposition favor the supposition that the infection is transmitted through the lymphatic channels, if the disease is not extended directly from the diseased osseous cavities?

It is conceivable that toxic matter might be held in the blood in a greater quantity than the individual affected can assimilate, hence there would be created a residuum of toxin in the blood. One should consider all the factors; the toxins prepare the ground and the elements of strain or injury determine the site. A change from the normal occurs in the eye, which causes a decrease in the protective processes of that organ. A strain on the accommodation occurs perhaps, as was so frequently the history in the gouty; or there is a slight ciliary trauma, which is speedily followed by iritis, cyclitis or scleritis. And one must recollect the facts of the intimate connection of the teeth with the maxilliary, the lacrimal and the inferior orbital sinuses, and especially of the intertwining of the various venous plexuses of these regions.

To carry further the analogy concerning the frequency of lesions about the ciliary region or the iris and limbus, it might be thought that such localization might be due to the fact that here, as in the structures about the joints and the more tendonous portions of the muscles, there is a gradation of the supply of oxygen, which thus invites the settlement of bacteria and affords them an opportunity for their growth—an anatomical circumstance which by the same process would create lesions from the circulation of toxic substances derived from matter from septic sources wherever located. Lesions thought to be toxic, therefore, may really be infectious in their nature. Benedict concluded from his studies that iritis of focal origin is really an inflammation of the muscular tissues—a myositis.

The character of the ocular tissues favors the growth of bacterial organisms and the nervous sensibility succumbs to the bacterial toxins. In addition, their abundant blood supply conduces to the lodgment of the bacteria, and from the situations established they thence circulate through the body fluids. At the region of the junction of the iris and ciliary body there takes place in the vascularity of the parts changes from a condition of high degree to one that is comparatively avascular. Here also there is accordingly less hemoglobin and less oxygen, from which depletion bacterial growth actively flourishes. It is easy, therefore, to conceive that infection might be brought to such a region by metastatic conveyance.

The chief organisms obtained from studies of the bacteriological content of matter taken from dental sockets and roots were the streptococcus viridans; in others, the staphylococcus, pneumococcus and bacillus pyocyaneus. In the acute infection there has usually been found a mixed infection, streptococcus viridans and staphylococcus; in the chronic cases, staphylococcus chiefly.

In Benedict's opinion, the organisms found in iritis and in rheumatic affections exhibit affinities for both the eye and the joints and muscles, depending for their manifestations upon the part in which they are located; that is, it may be a spontaneous expression within the iris or it may be acquired by growing on iris tissue. The affinity of an organism for special tissues may be lost when the organism is grown in different environments, and it may lose its virulence or it may at one time attack the iris and at another time the joints and muscles elsewhere.

It has so happened, in clinical practice, that eyes have seldom been removed for such disease as we have been considering, and the opportunities for laboratory studies have been limited to the examination of material from less vital organs, and to experimentation on lower animals.

From Woods' studies of the effects of bacterial cultures on the uvea of rabbits, we learn that reactions occurred to bacteria prodigiosus, and that the poison generated was not directly due to ferment activity but to a degenerative product formed from the bacterial body and the protein of the culture media through the proteolytic action of the bacterial ferments. The poison, which is a ptomain, when injected intravenously, excited the clinical symptoms observed in the animal.

Rosenow, in carrying on a series of studies on rabbits, injected streptococci obtained from rheumatic subjects, from appendiceal abscesses, pyorrhea alveolaris, suppurating tonsils, etc., which produced acute iritis or iridocyclitis, the lesions consisting of red blood cell extravasations and leucocytic infiltration.

The etiology of only too many cases of chronic iridocyclitis remains obscure although one is inclined to believe them to be of a metastic nature. In the midst of this obscurity one should ascribe greater importance than is given to the consideration of "colds" as a factor in the metastasis of any latent morbid agents throughout the body. So, again, one might plead, that because the complaints of the rheumatic are exaggerated in cold damp weather it would appear advisable to retain the name rheumatic iritis at least a little longer. And, as there are cases, the so-called "idiopathic," in which a definite specific cause cannot be ascertained, which depend on general disease at present unknown to us or are of obscure infections, the term may be continued to express our ignorance. Yet in the light of present day research it should be used no longer.

It has not been the purpose of this presentation of the causation of uveitis to consider the probability of a given case being the subject of tuberculous or of syphilitic infection, although the importance of either or both of these as etiological factors in any or all cases has not been overlooked. No case which seems to be obscure should be allowed to go without the systematic tests for these two classes of infection and the possibility of their presence should be constantly maintained in our minds.

This essay is based on the classical communications of Fuchs and de Schweinitz on the Pathogenesis of Chronic Uveitis, at the Section of Ophthalmology of the XVII International Congress of Medicine, London, August, 1913, and a survey of the literature since that date. I have not burdened my listeners and subsequent readers with the voluminous bibliography which has accumulated during the past decade, for such can be obtained in the issues of the "Ophthalmic Year Book," and in "Ophthalmic Literature."

DISCUSSION

Dr. Lewis H. Taylor (Wilkes-Barre): It is quite customary, in opening the discussion on such a paper as the one we have just heard, to compliment the essayist and say that he has so thoroughly covered the ground that there is but little to be added. I do not mean to follow the stereotyped plan, but if I did say this, it would be eminently true. To say that the paper was prepared by Dr. Burton Chance is all we need to know that it was thoroughly done. Dr. Chance presents many points for our consideration and I shall not attempt to discuss them all but merely to stress one or two points and present, if time allows, the consideration of three recent cases only, which I think may properly be regarded as having some bearing on the subject before us. I know Mr. Chairman, the subject is "Etiology of Uveitis," and that we are not allowed to discuss treatment nor anything else extraneous, but if I mention treatment I hope you will not call me down until you have a chance to see whether it has any bearing on the etiology itself.

The cause of the trouble being known in any disease the remedy should follow naturally, and hence a search for etiology of disease is most important. But this is not always easy and the extent and thoroughness of Dr. Chance's paper rather appals us when we think of the many avenues through which we must search to find the real cause of the trouble. Sometimes, however, it is very plain; and yet even so, is often overlooked in our anxiety to give relief at once and sometimes overlooked in our search for preconceived causes of certain diseases.

Someone has said the patient comes to find out what ails him and why. This may sometimes be true but in general what the patient wants is to get well, no matter what the cause of the trouble. In fact he very often wants to conceal the real trouble.

From many that might be cited, I want to refer very briefly to three cases, two of which have very recently come under my care, and the third only a few years ago. G. P., aet. 46, came to me May 6, 1922, in great distress, saying he had been under treatment for two weeks without any relief from almost unbearable pain in his left eye. Examination showed keratitis in the lower half of the cornea and iritis, atropin failing to dilate the pupil. I, of course, at once put him under atropin and dionin and sought for the cause later. On May 8th he was decidedly better but the iritis was still severe. He had a very badly decayed eye tooth on the left side and I advised its removal. This was done the same day and two pus sacs found at the root of the tooth. From this time on the recovery was rapid, pain and inflammation subsided, and by June 1st the patient was well. Dr. Chance has laid stress on the importance of the teeth as factors in the etiology of iridocyclitis and we should always consider this factor in any obscure case of this trouble. It will not always do to take the patient's statement that his teeth are all right. An x-ray examination should be made in every doubtful case. In the one I have just cited no x-ray was necessary, because the hopeless condition of the tooth could be seen at a glance.

I should like to mention a second case because of its bearing on compensation. One of my colleagues left town for a vacation on July 31st, and asked me to look after a patient whom he had seen a couple of days earlier and who had received a slight corneal injury in his work. Instead of healing, as such wounds readily do, severe inflammation followed. When I took the patient in charge I found a severe iritis developing. Atropin, dionin, leeches and mercury were necessary to subdue it, and it was several days before the pupil could be dilated and the eye at all comfortable. I treated him for two weeks, when he was turned over to his former doctor in fairly comfortable condition though not yet fully well. The patient stated also, that he had a similar attack of eye trouble twenty years before. This is interesting in present compensation days. This man was laid up for several weeks. How much of his trouble was due to the slight trauma and how much to something inherent in the man himself? Dr. Chance has mentioned trauma as a factor. Will a slight corneal wound set up an iridocyclitis? No, not ordinarily; and yet in a patient ready to have such a disease it may be the match to start a serious conflagration.

The subject is a large one, and a whole afternoon might be devoted to it. One could bring up from his experience numerous illustrative cases for many of the factors mentioned in the admirable paper that we have heard, but I want, if I may have time, to mention one more because of its obscure etiology.

I think there is a tendency in most of us to regard iritis as in some way associated with syphilis, and whether we are sure of it or not we give mercury in some form. I do, at least, for as pointed out by Dr. Marple some years ago, mercury is helpful with iritis whether associated with syphilis or not. Someone divides the world into three classes: those who have had syphilis, those who now have syphilis, those who will have syphilis.

In July, 1919, a patient was brought to me from a neighboring town, with a severe case of keratitis and iritis, bringing a letter from a physician in Brooklyn who had treated the patient for three weeks. He stated that he had had two Wassermann tests both negative, but he felt that the whole human race was remotely affected by syphilis and was giving this patient potassium iodid in increasing doses. The patient was 31 years old, married, mother of two healthy children. Both eyes were badly affected. She was perfectly honest and would gladly coöperate in finding the cause. She had spent a year or two in India and knew about syphilis and perfectly willing to answer any questions as to her life and her husband's. I will not attempt to detail all the treatment, for it was long continued and ended in perfect recovery. On August 27th we discontinued the iodid and in spite of negative tests and negative history, began injections of salvarsan. These were given by Dr. McClintock as a therapeutic test. The eyes gradually cleared, though at first she was almost entirely incapacitated. Her husband was in government employ which took him to different parts of the country, and after a few months she went with him to the South. I had her continue the iodid and sent letters to other oculists where she expected to be. I saw her at intervals for two years in which she continued the iodid up to December, 1921, when it was discontinued. The result was a perfect cure and I fitted her with glasses giving normal vision. I saw her last in January of the present year, apparently perfectly well. No syphilis could be determined and yet syphilis must have been the causative factor.

I should like to add my word to Dr. Chance's on the importance of a general medical knowledge in investigating these cases. He and others have mentioned constipation, indigestion, malaria, though I don't believe it causes uveitis, and other causes. When we think of the whole subject, choroiditis, iritis, iridocyclitis, descemetitis, it behooves us to search for various causes and to remember that we have a patient to consider rather than a disease, and beyond the apparent and readily discernible trouble there are many general conditions that must be taken into consideration before we find the true cause of our patient's trouble. I like the expression of the essayist when he says: "The term idiopathic may be retained to express our ignorance." In spite of our care there will be some causes that escape our scrutiny and we just call them idiopathic and let them go at that.

Dr. Edward B. Heckel (Pittsburgh): I want to congratulate Dr. Chance on this very splendid paper. He emphasizes the fact that the etiology and treatment are separate subjects. We sometimes search for causes in these cases and can not find anything except disordered general metabolism.

I have in mind a young lady who was under treatment for some time for uveitis. All examinations were negative and it was decided that she was suffering from a general metabolic disorder. She was put on the atrophine treatment and after four months she made a good recovery.

We frequently have difficulty with patients when we want their teeth x-rayed; so many patients object to an examination of the teeth. This is very important since, unless a radiogram is made, the very tooth which is at fault may escape attention; or there may be some cause which is not manifested during the ordinary examination.

Dr. George W. Carr (Wilkes-Barre, Pa.): It may be of interest to this section to know that the case which Dr. Taylor reported in his discussion of this paper was a compensation case and covered by compensation insurance.

Slight as the injury was, the insurance company took the view that the iritis might have been caused by the injury and paid the claim.

Dr. F. B. Harding (Allentown, Pa.): I saw a case some time ago which bears out the case Dr. Heckel mentioned, that of a young man, 25 years of age.

When he came in for treatment a Wassermann was taken which was negative. One taken two weeks later was also negative. He saw a very good physician and had the gonorrheal infections ruled out. We had the prostate looked over several times to be certain of this fact. No tonsil infection was found. He did not improve and on questioning him further I found he had an office job and ate very irregularly and mostly of pastry. The next and last thing was the gastrointestinal function as a source of irritation. With that in view we made some cutaneous proteid tests. Strange to say he reacted very promptly to the ordinary wheat test. With sugar and wheat ruled out of his diet he promptly got better. Up to this time specific treatment had seemed to make him worse and was discontinued. I have seen him several times since that date and whenever he eats pastry or does not attend to his bowels he has a slight return of his ocular trouble.

Dr. Chance (in closing): When the invitation was given me to present a comprehensive dissertation on the etiology of uveitis, I thought the load was a pretty heavy one because the field is so very wide. The amiable secretary said I might use my own judgment as to the length of the paper, but later, after I had written some forty pages, more or less, he wrote that only fifteen minutes had been allotted me.

I have tried to be reasonable in my attitude toward the etiology; the subject is a very wide one. One should always bear in mind that syphilic infection can be at the bottom of vague symptoms, and when a case of pronounced syphilis presents itself, one should endeavor to pay the same attention to the other aspects of the case as one would in a case not so infected. The teeth should always be examined in any case of uveitis, and one should never be satisfied with the mere say-so that they are all right. Diseased teeth which are apparent to anyone as being the cause of ill-health should of course be treated or extracted; yet I make an effort, sometimes going with the patient, to have a careful radiographic study made.

The case of a lady comes to my mind, whose bridge prosthesis had for a long time given her trouble. Her dentist did not think that it could be the cause of her eye troubles, yet careful radiographic studies showed that the two molars on the side of the affected eye, to which the bridge was anchored, were diseased, and on which, after the extraction, large pus sacs were found. Within ten days her eye was free from disease.

The part that teeth play in the production of uveal disease is truly most important, nevertheless we must not have sound teeth pulled.

Much might be said of the metabolic cases, but the time is too short. Why should a healthy young man eat only pastry? Probably because he can't chew solid food, on account of the condition of his teeth.

The possibility of an injury setting up a latent disease should be given every consideration in these days of damage suits. I think, however, that with the means we now have at hand, the laboratory, the physical tests, etc., we should be able to arrive at some method of relieving patients suffering with uveitis, and thus prevent the damaging recurrences so commonly recorded.

PRACTICAL POINTS ON CATARACT EXTRACTION*

JOHN B. CORSER, M.D.

SCRANTON

When one considers the age and infirmities of a large number of those afflicted with lens opacity, with the attending difficulties and mental distress caused by a journey far from their homes, it is at once evident that there is something to be said in favor of developing ophthalmic surgeons in our smaller medical centers. It is not, therefore, the purpose to present an exhaustive paper on cataract extraction but to consider the subject from the standpoint of an ophthalmologist practising in a small community.

In looking over the literature on cataract extraction so many radically different methods of operation are advocated that one is at a loss to decide which method to adopt. Naturally, the easiest and safest operation giving a good result is the one to be chosen by the surgeon whose experience is necessarily limited. It is hoped that the discussion of the subject from this standpoint may develop some facts which will be of service.

In order to open the discussion, this paper will give the method that we have followed for some years.

In the preliminary examination of the patient, attention is given first to the eye and its adnexia. The conjunctival sac must be free from inflammation and tear duct normal in its function. If diseased, these parts are brought to the best possible condition, which may even require removal of the tear sac. The nasal cavities are examined. It is desired that the cataract should be mature but, under certain conditions, immature cataracts are operated. Light projection and ocular tension are recorded. The ophthalmoscopic examination of the better eye often reveals the condition of the vitreous and fundus of its fellow. The heart, kidney and blood condition is examined and the digestion considered.

At this time, the patient is placed in a recumbent position and the lid manipulated and washed with boric acid solution to gain the confidence of the patient. Instruction and training is given to close the eye as though going to sleep. This last is repeated many times until the patient learns to close the eye without strain. When practical, the patient is seen two or more times for the purpose of this training and the operation is not performed until the behavior is satisfactory. A thorough bowel movement is required the day before the operation.

It is our custom to operate in the morning before attempting any other line of work. When the patient enters the hospital, the face is washed with soap and water. One hour before the appointed time, one drop of one per cent. atropine solution is instilled in the eye to be operated.

We have found it no small advantage to have these patients attended by our own nurse, who uses tact in allaying the mental perturbation that is usually found in those to be operated.

The patient is quietly taken to the operating room on a cart. Care is given to make the operating table as comfortable as possible and an effort is made to divert the patient's mind from the seriousness of the occasion.

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The face and lids are washed with soap and water and wiped with sterile gauze saturated with one to three thousand bichloride solution, special attention being given to the lids and cilia. The conjunctival sac is flushed out with boric acid wash and a drop of one per cent. atropine solution instilled. Two drops of cocain are instilled in each eye and the same repeated in the eye to be operated every four minutes for four more applications. With the second application a subconjunctival injection (two drops of one-half per cent. cocain solution) is made just below the corneal limbus.

Artificial illumination from the ceiling is used and the patient so placed that when the light is fixed the eye is in a favorable position for operation. In addition, oblique illumination from a hand searchlight has been found most convenient.

The usual corneosclero incision is made, preferring that the incision be in the cornea rather than in the sclera and that the wound be free from jagged edges. Conjunctival flaps have not been found of particular advantage. It is desirable that, after the eye is transfixed, the knife be held flat (parallel with the limbus) and care given that the cutting edge does not dip downwards as the incision is made.

The iridectomy is then performed if a preliminary has not already been done, the patient being warned that a pin prick might be felt at this time. The speculum is then removed and the upper lid retracted by an assistant, using a Smith's lid elevator.

It is difficult to overestimate the value of a trained assistant during the whole operation.

A broad transverse incision through the upper third of the lens capsule is made with a Knapp's cystotome and the lens expressed by pressure at the lower limbus and slight pressure downwards at the upper. All, or a part, of the lens matter remaining is washed out with warm boric acid solution, using a small rubber syringe (ear and ulcer) fitted with a metal nozzle. We prefer to leave a part of the cortical lens matter rather than prolong this washing. The rubber syringe must be thoroughly cleaned as well as sterilized before using so that no rubber particles be left in it.

The conjunctival sac is cleared of debris and the corneal wound examined for tags of capsule or lens matter. Atropin is instilled, the lids are closed, and bichlorid ointment (one to three thousand) lightly smeared over the cilia and lid margins. Dressings are applied over both eyes and the patient moved to the bed, which is made as comfortable as possible.

In spite of care in the position on the operating table and later in bed, pain in the back is much more frequent than desired but can often be relieved by changes in the position, especially in the raising of the head and shoulders after the first twelve hours. We have, of late, given our patients much more latitude in movement and position than formerly but care is exercised that no pressure be made on the operated eye.

The experienced and tactful nurse is, here again, of great help and is a big factor in allaying the worry and anxiety of the patient.

The eyes are not disturbed until the morning of the fifth day, unless pain in the operated eye is complained of and, in our last forty cases, the operated eye has not been exposed during the first four days. After completing the examination and toilet of the eye, atropin is used and dressings are again applied to both eyes until the next day, when the unoperated eye is left open. The operated eye is dressed daily and left open after seven days, if the wound is free from marked irritation.

Secondary operations on the lens capsule are necessary in the great majority of cases and usually performed one month or more after the extraction. This procedure, which is considered rather lightly by most textbooks, is not as simple and free from danger as it would seem and will always be a point in favor of the extraction of the lens in capsule.

It was my intention to take up some of the complications following cataract extraction, but I believe that phase should be left to masters of the subject, who can speak with authority, and will therefore limit the scope of this paper to the type of operation best suited for the average ophthalmologist.

The brilliant results obtained by the Smith and Barraquer operations and their modifications are attractive to all, but we believe that the average ophthalmic surgeon should first develop a safe method requiring less operative skill and experience, giving satisfactory results, until such time as the larger number of more experienced men have tried out and settled on one of the methods of removing the lens in capsule.

Now, as to results of operations. Statistics, as to visual results, are often misleading and, unless the previous condition of the eye is well understood, it is difficult to determine the effect any form of operation will have on vision. In other words, the resulting vision is often influenced more by the previous ocular condition than by the type of operation used.

Any operation for the extraction of the lens, without accident and without subjecting the eye to marked inflammation and which leaves a clear cornea with average amount of astigmatism and a pupil which allows an unobstructed passage of light rays, should be favorably considered. Vision will depend on the vitreous and integrity of the fundus.

In concluding, I would again mention:

1. The training of patient before operation.
2. Preliminary iridectomy, when practical.
3. The desirability of operating by artificial light.
4. Subconjunctival injections of one-half per cent. cocain solution.
5. Leaving the first dressings in place for four days, if no untoward symptoms develop.
6. A desire to stimulate discussion, which may help determine the safest and most sound operation to be performed by the average ophthalmic surgeon.

DISCUSSION

Dr. Leonard G. Redding (Scranton, Pa.): This operation in small communities is a problem of considerable interest to me, and I have come to the conclusion that the answer rests with the men themselves. A patient's first question after a diagnosis of cataract is usually, "Who do you think would be a good man for me to have operate?" Sometimes he will consent to have you do it. I think that the men in small communities have not been operating because one failure will do more harm to the operator than can be counteracted by half a dozen good results.

I am glad to see that Dr. Corser has stuck to the old method. I had the good fortune to sit beside Barraquer in the International Conference in Washington and heard him read his paper on his method of operation, and it was most interesting. However, I feel that if I had to have the operation done on my own eye, I would want it done by the old method.

Another thing which should be included in the after treatment is the fitting of glasses. A cataract case treated but not properly fitted with glasses is one of the worst cases that comes into a doctor's office.

Dr. Lewis H. Taylor (Wilkes-Barre, Pa.): I was in Minneapolis two weeks ago and heard a paper by Dr. Green of San Francisco on the infiltration method of anesthesia.

He sinks deep into the orbit through the lower lid and up through the upper lid and all around everywhere, injecting cocain for local anesthesia. It seems to me a perfect absurdity. I sat beside him two days later in Rochester and he said that he and his brother found this method very valuable, especially in the Barraquer operation. It may be a good thing for them but I believe that the method described by Dr. Corser is perfectly acceptable and the proper sort of thing for a cataract operation.

Dr. Corser brought out one point about the patient being ready for the operation and then having to wait a few minutes. Years ago, way back in the eighteenth century, in writing on this subject of cataracts, Baron Wenzel said: "It is well to wait a few moments until the patient becomes absolutely quiet." I have noticed this with some excellent operators; they are all ready but they wait a moment to encourage the patient and get him over the period of nervousness.

In regard to the place of operation, I always operate with the patient in bed. Years ago, in McCarty's hospital in London I saw beds with removable head pieces which could be readily taken off. From that time on, I never operated in any other way. I invariably operate with the patient on the bed in front of a window or else by artificial light; I think it is important not to disturb the patient in any way after operation.

Dr. George H. Cross (Chester, Pa.): I always feel when the subject of cataract and cataract operations comes up for discussion that everyone has his own ideas and individual viewpoint on the method of operation and technique. Dr. Corser referred in his paper to the difficulty in securing a trained assistant. I think the best way is not to depend on an assistant at all, or only in a minor capacity. It is very easy for one starting cataract operative work so to train himself that he can get along without an assistant.

Concerning the Doctor's objection to the conjunctival flap: this, I feel, is a very useful procedure and is of great assistance in coapting the margins of the incision, and in healing fast (as it does in such a short time) is most valuable in preventing loss of the contents of the globe from accidental trauma.

Personally I have had very little experience with the infiltration method of anesthesia, but after seeing Prof. Barraquer use it in three or four cases, I was very much impressed and think it a most excellent method. If you can take hold of a lid and have it immovable, it certainly takes a lot of responsibility and worry off your shoulders. I am going to try this method. It seems a great advance in cataract extraction.

Little things at times are of greatest help in putting a patient at ease, viz., the rule after operation to see that the patient is questioned when back in bed as to his wants—whether he desires one, two or three pillows, etc.

I believe with Dr. Taylor that a few words of encouragement to the patient are of great help and aid in relaxing nervous tension.

Dr. Luther C. Peter (Philadelphia): Dr. Corser has outlined a very practical and sane method of procedure in cataract extraction. Exception might be taken to a few methods adopted by the essayist. We all have quite definite ideas in reference to the technique of cataract extraction. In the matter of anesthesia, we have been in the habit for some years past, of using narco-anesthesia, which consists of the administration of 15 grains of sodium bromid and 10 grains of choral hydrate, two hours and one hour before the time of operation, 1/6 grain morphia and 1/150 atrophin by hypodermic, one half hour before the operation. This method brings the patient into the operating room sufficiently quiet to be indifferent to his surroundings and yet sufficiently wide awake to respond to the surgeon's instructions. A few cases have been nauseated by the morphin; in one instance we were obliged to postpone operation until the second day because of the nausea. This, however, is exceedingly rare.

As to the lid anesthesia, we have followed Barraquer's method with favorable results. Two c.c. of a 1½ per cent. solution of novocain are injected under the skin to the outer corner of the eye, the needle being directed first upward, then downward, then finally across the base of the lower lid. This eliminates largely the effort on the part of the patient to squeeze. It also increases the anesthesia. The patient rarely knows when the operation begins or ends.

The method of treating the anterior capsule is most important. It is our custom to employ first a cystotome to incise the anterior capsule. Sharp capsule forceps are then introduced and the anterior capsule, in the pupillary space, is removed entirely. After the lens is extracted, any soft cortex or blood which remain are removed by free irrigation with normal saline. There is no harm in the use of irrigation if properly and carefully practiced. Needling for an after cataract is rather rare in our experience.

In regard to the dressings, we are quite free to admit that it requires an unusual amount of courage to leave the eye closed for five days. A case operated on about a year ago by Colonel Smith was unfortunately allowed to remain closed according to his instructions for seven days. When the dressing was removed, the anterior chamber was filled with blood, the iris was prolapsed and recovery was imperfect because of the subsequent iridocyclitis. In a case operated on by Dr. Barraquer, in which the first dressings were removed at the end of one week, the anterior chamber also was filled with blood, and the patient made a very prolonged and tedious recovery. Some of these patients are phlegmatic and do not complain of pain, even though it may be present. It is always a safe plan to remove the dressings at the end of 48 hours to note the condition of the lid, the presence of swelling and an excessive amount of secretion. If an infection is present, early treatment is most important.

Dr. Corser (in closing): Concerning Dr. Taylor's suggestion of operating in bed, I approve of this but we have not the conveniences for doing it and I think it better to follow one line of procedure than to mix them.

In two cases I have tried the infiltration of the orbicularis palpebrarum nerve supply to prevent blepharospasm, recently popularized by Barraquer, and I need to learn more about it because only partial paralysis resulted.

I saw one case operated on in Philadelphia by this method and the paralysis of the muscle, in that case also, was not satisfactory.

Concerning morphin and other drugs used to quiet the patient, I have given these up because of the nausea and vomiting which occasionally follow.

POSITIVE WASSERMANN TEST IN A FATAL CASE OF ESTIVO-AUTUMNAL MALARIA

This case is reported by Guthrie McConnell, Cleveland (*Journal A. M. A.*, April 21, 1923), because of the control of a positive Wassermann reaction by necropsy in a case of malaria, that clinically showed no evidence of syphilis in spite of the history of infection. The necropsy, however, disclosed very definite syphilitic lesions of the aorta, with involvement of the aortic leaflets.

SELECTIONS

DIABETES AND LIFE INSURANCE*

HENRY J. JOHN, M.D
CLEVELAND, OHIO

If sugar is found in the urine in the course of an examination for life insurance, the application is promptly refused, even though the applicant is apparently in the best of health. This is a general rule of all insurance companies, with the exception of the Canadian companies, since long experience has shown that diabetics are a poor risk. Nevertheless, to reject an applicant because of glycosuria, without any further investigation, is often both unjust to the individual and unprofitable to the insurance company, since glycosuria of nondiabetic origin is present in a considerable percentage of individuals. In our series[1] the percentage reached 13.8, proving that nondiabetic glycosuria occurs frequently enough to be considered in diagnosis.

When urinalysis reveals a glycosuria, the only definite statement that can be based upon the presence of glycosuria is that the kidneys are permeable to sugar. For further information regarding the possible significance of the glycosuria, a determination of the sugar content of the blood is required. If in the fasting patient a high blood sugar content is found we may be sure that the patient is a diabetic. If, however, the blood sugar lies somewhere between 90 and 138 mg. per 100 c.c. the diagnosis is not so clear-cut. In many cases of early diabetes the kidneys have a low permeability; therefore, in such a case it becomes necessary to determine whether glycosuria with a low blood sugar content is due (1) to renal diabetes, or (2) to true diabetes.

Since the blood sugar content of any diabetic can be brought to a normal level by fasting or a low diet, it is necessary to employ a further method of diagnosis—the reaction to carbohydrates. If the individual is a nondiabetic, he will handle the carbohydrates well; if he is a diabetic, the carbohydrate metabolism will be retarded, the degree of retardation depending on the severity of the disease. The glucose tolerance test, therefore, is the final means whereby the diagnosis of diabetes may be definitely established. After a fasting blood sugar determination, the individual is given 100 gms. of anhydrous glucose in water by mouth, after which blood sugar determinations are made at the end of one-half hour and one, two, three and four hours, respectively. The urine is examined at the same intervals for glycosuria. If the individual is a nondiabetic, the first determination will show a normal blood sugar content (120 mg. per 100 c.c. or less); the blood sugar will increase abruptly, the highest point being reached at the end of the first half hour, with a rapid return to normal content within one or one and a half hours. In a typical case of diabetes, the increase in the blood sugar will be slow with an equally slow decrease, so that the normal level will not be reached for from six to nine hours. These are typical pictures, of which there are many varieties.

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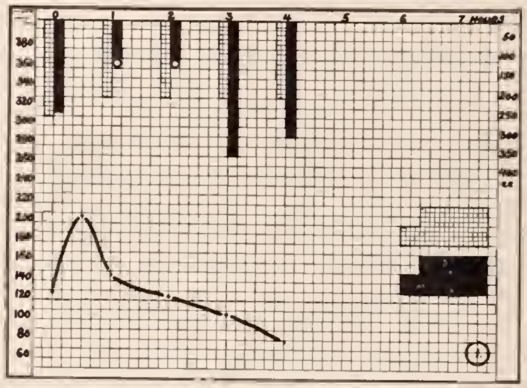
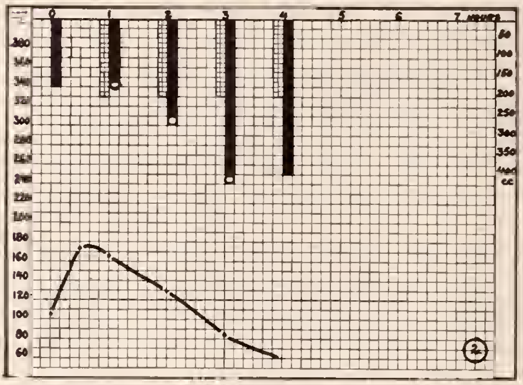
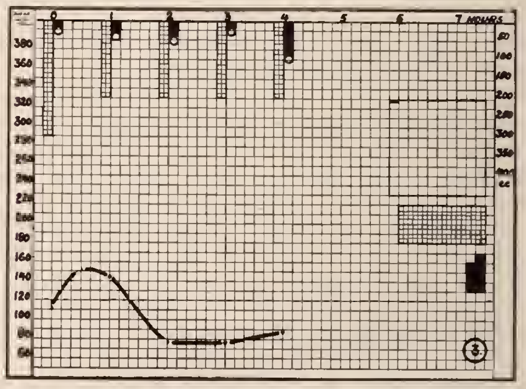
*From the Cleveland Clinic, Cleveland, Ohio.

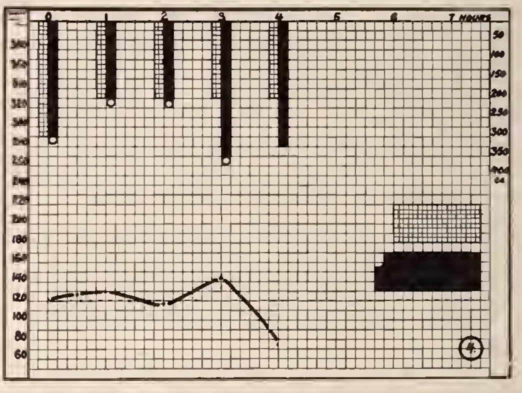




Regardless of glycosuria, any case is considered to be normal, in which the blood sugar returns to the normal level (120 mg. per 100 c.c.) within three hours after the ingestion of 100 gms. of glucose. *Regardless of glycosuria*, any patient in whom hyperglycemia persists for more than three hours should be considered as a diabetic. We believe that the carbohydrate tolerance test is the only sure method by which a differential diagnosis between diabetes and nondiabetes can be established. Since glycosuria denotes permeability of the renal filter, and that only, it follows that when the blood sugar content is reduced below the level of kidney permeability, then no sugar will appear in the urine even though the blood sugar content be as high as 350 mg. per 100 c.c. or more. On the other hand, the level of permeability may be as low as 53 mg. per 100 c.c.[2] This low level of permeability appears in many individuals whose carbohydrate tolerance is normal, in whom there is no question of diabetes. Certainly life insurance should not be denied to these individuals.

The accompanying curves show the carbohydrate metabolism of certain individuals who consulted me because they had been refused life insurance on the ground that they had glycosuria and therefore were diabetics. Thus, eight cases are included among my total series of 158 cases in which glucose tolerance tests were made. Among these eight there were 2 diabetics (25 per cent), one prediabetic (12.5 per cent) and 5 nondiabetics (62.5 per cent). Thus, by their present inflexible ruling the life insurance companies refused five good risks and one fairly good risk.



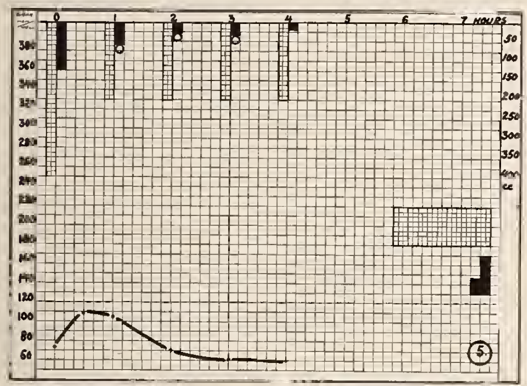


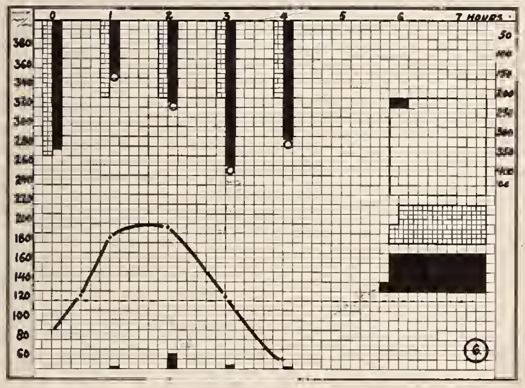
EXPLANATION OF CHARTS.

The checkered columns at the top of the charts indicate the water intake; the solid black columns at the top indicate the urine ouput. The total intake and output during the period of four hours or more is indicated by a like marking at the lower right corner of the chart. The circles at the bottom of the black columns indicate the presence of sugar in the urine.

The broken horizontal line opposite "120" is the normal level of blood sugar, i. e., 120 mg. per 100 cc. of blood. The broken vertical line opposite "3 hours" indicates the period within which, in normal individuals, the blood sugar content again becomes normal after the ingestion of the standard dose of glucose. The heavy curve represents the blood sugar content at the designated periods. The dots which break the glucose tolerance curve indicate the intervals at which blood was taken for sugar estimation. Each solid black column at the bottom of the charts represents the sugar content of the urine output indicated by the corresponding solid black column at the top of the chart. Each square included in these lower columns represents one gram of sugar, and the total sugar output—the sum of these squares—is indicated by the solid black portion of the large square at the right of the chart, which includes 100 squares, representing 100 gms. of glucose—the total sugar intake.

Case 1, a Jew, aged 34, married, a plumber by trade, of good habits, with a negative family history. Nearly two years before I saw him, this man had been pronounced a diabetic by a life insurance examiner because sugar was found in his urine. His family doctor referred him to an internist who made a glucose tolerance test which showed a perfectly normal curve. Nevertheless, the diagnosis of diabetes was repeated and antidiabetic treatment was prescribed which the patient had followed ever since. When this man consulted me on January 25th, 1922, I advised a glucose tolerance test, not knowing that one had been made before. The resultant curve is given in Chart I.

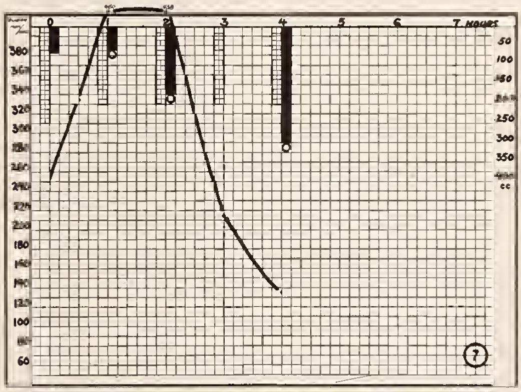


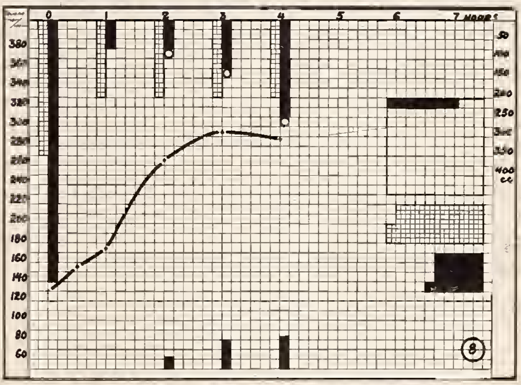


This shows a good carbohydrate tolerance—certainly not a diabetic condition. Sugar appeared in the urine when the blood sugar content was at 146 and at 125 mg. per 100 c.c. Following this test I placed the man on a forced carbohydrate diet for a week, asking him to eat all the starchy food, cakes, pastry, candy, etc., he could, to see if this would raise his blood sugar. At the end of the week the blood sugar content was normal. This final test supported the findings of the carbohydrate tolerance determination, and demonstrated that the man was not a diabetic, his glycosuria being due to a permeable renal filter. Up to the present time the patient has had a full diet and his blood sugar has remained normal. To know that he is not a diabetic has lifted a tremendous burden from his mind.

Case 2, a man, aged about 50 years. This patient had taken out various insurance policies and no question had ever been raised about his physical condition until the fall of 1917, when he made application for a $10,000.00 endowment policy, due at the age of 65 years. The examiner reported the presence of sugar in the urine, but the applicant, feeling certain that some mistake had been made, put himself in the hands of a laboratory clinician, and after numerous tests, in none of which was a trace of sugar found in the urine, insisted that the company reopen the case. He went to the Home Office of the Company and was examined there, undergoing different tests which included test meals. On his return to Cleveland he was reëxamined and the policy was finally issued to him.

In May, 1921, this man was solicited by a representative of another company, but declined to take additional insurance. However, within a few days of this solicitation the company's examiner appeared to make a physical examination. As a matter of courtesy the examination was permitted but the policy was never taken out and the medical findings were never reported to the patient.





In August, 1921, application for insurance in still another company was made by the patient. This examination was perfectly normal in every respect, but nevertheless, the Home Office on receiving the papers declined the risk because of "a recent finding of sugar in the urine." The only possibility for such an unfavorable report, apart from the difficulty in 1917 which was cleared up, was the examination in May regarding which the applicant had no information whatever. Since this rejection further laboratory tests showed absolutely no trace of sugar in the urine. In none of the tests has there ever been any record of glycosuria except in the two instances mentioned above. This man had never taken any treatment whatever, nor had he in any way restricted his diet because of the alleged glycosuria and he felt satisfied that the condition did not exist.

This man's family history is entirely negative. He is a very active business man and as far as he knows has always been in perfect health. The Wassermann reaction was negative. The glucose tolerance test (see Chart II) showed a normal tolerance of carbohydrates. Glycosuria was present but this glycosuria denoted only the condition of the renal filter.

Case 3, a salesman, aged 34. The patient's father died of diabetes; one brother has diabetes and a paternal uncle died of diabetes. The patient has had typhoid fever, grippe and gonorrhea, but no operations.

In May, 1921, he applied for life insurance. Sugar was found in his urine and he was promptly refused. A glucose tolerance test (Chart III) showed a normal curve, a good carbohydrate tolerance, although glycosuria was present throughout, even when the blood sugar content was 77 mg. per 100 c.c. The normal carbohydrate tolerance shows that this man should not be considered a diabetic simply because he has a diabetic family history and has glycosuria. Such a case never will develop diabetes unless some intercurrent condition affects the pancreas and thus produces diabetes.

Case 4, a clerk, aged 22. His family history is negative. He has had typhoid, grippe and occasional attacks of tonsillitis. He has been rejected by an insurance company because of sugar in his urine and told that he had diabetes. This naturally has preyed upon his mind to such an extent that he has begun to develop all kinds of imaginary symptoms and complaints.

The glucose tolerance curve (Chart IV) of this patient shows not only a normal, but a strong tolerance for glucose, the curve itself being practically a straight line. In other words, this man is burning up the glucose and storing it as fast as it gets into the circulation, thus not giving it a chance to accumulate and rise in the blood stream. Nevertheless glycosuria appears throughout.

This case possesses what we may consider as 100 per cent efficiency in the utilization of carbohydrates. This man, therefore, is a perfect risk for insurance as far as any question of diabetes is concerned; nevertheless, he was turned down and told he had diabetes on the evidence of urine examination alone.

Case 5, a university professor, aged 46, single. The family history is negative and the patient has no complaint. On a recent application for life insurance he was refused, being told that he had diabetes because of sugar in the urine.

The glucose tolerance curve (Chart V) shows a very strong tolerance for glucose—a 100 per cent efficiency in utilizing carbohydrates. Glycosuria is present—a meaningless glycosuria. This man is a perfect risk as far as diabetes is concerned, yet he is refused and as the record states that he is a diabetic, he will be barred from all other life insurance companies.

Case 6, a Jew, a motion picture director, aged 55 years, married; family history of no importance. His only illnesses had been typhoid at the age of 20, and slight attacks of rheumatism and of ague in childhood.

He had applied for life insurance two years before he consulted us and had been promptly refused because of sugar in the urine. He was on a diet, as a result of which the glycosuria disappeared, and he then passed the life insurance examination with flying colors. Since that time he has been on a somewhat restricted diet, and lately has been losing weight. His glucose tolerance curve (Chart VI) shows an incipient lack of utilization of carbohydrates, since it takes three hours for the curve to return to the normal level, and sugar was present in the urine throughout the test.

This condition is what I call the "Prediabetic Stage."[3] While this man is not a normal individual as far as his utilization of carbohydrates is concerned, nevertheless, by adhering to the proper diet (which in this case is very liberal) he can remain in the prediabetic stage and will not develop diabetes. As long as he remains a "prediabetic" he is as good a risk as anyone. The only danger in cases of this type is that they may grow careless, and cease to adhere to the necessary diet and to repeated checking by means of blood sugar estimations and thus may drift into diabetes.

Case 7, a Jew, 35 years of age, a druggist, married. The family history is of no interest. Sugar was discovered in the urine when he applied for life insurance examination and he was promptly refused.

The glucose tolerance curve of this man (Chart VII) indicates a definite diabetes. Notwithstanding this, at the beginning of the test, when the blood sugar content was 250 mg. per 100 c.c., there was no glycosuria. The kidney permeability, therefore, is at a high level. It is a well known fact, described by Folin[4] and others, that on the descent of the blood sugar curve glycosuria appears even at 136 mg. per 100 c.c. If a heavy carbohydrate meal is given to a patient of this type, sugar will appear in the urine; but if the diet is restricted for a time there will be no sugar in the urine.

In this case then, in contrast to the preceding case, the sugar in the urine did indicate diabetes. It was, however, entirely by chance that the insurance doctor examined this patient when glycosuria was present, i. e., at a moment when his blood sugar content was high. Had the patient eaten moderately for a couple of days, or fasted for a single day, there would have been no sugar in the urine and the applicant would have passed the examination easily, in spite of the fact that he is a diabetic. This case again shows clearly the fallacy of basing an opinion on a urine examination alone.

Case 8, a school boy, 18 years of age, a physician's son. The family history is of no importance. He had kidney trouble, brain fever, grippe and pneumonia in childhood. When he was 16 years of age he had scarlet fever followed by a tonsillectomy.

In November, 1921, he applied for life insurance and when sugar was found in the urine was promptly rejected as a diabetic. Since that time he has been intermittently on a somewhat restricted diet, and most of the time his urine has been sugar-free.

A glucose tolerance test on this patient shows a definite diabetic curve which continues to rise at the end of the third hour and just begins to decline at the fourth hour. No sugar appeared in the urine until the blood sugar reached 265 mg. per 100 c.c. In other words, the kidney permeability is at a high level.

In this case the assumption that sugar in the urine meant diabetes happened to be right, as was proved subsequently. Yet, in this case again, as in the one preceding, had the applicant fasted the day before his examination, his urine would doubtless have been sugar-free and he would have passed the examination for life insurance, in spite of the fact that he would be a bad risk.

There is no doubt that because of the presence of glycosuria, insurance companies are turning down many hundreds of cases that are very good medical risks. Thus the companies are losing thousands of dollars annually, and many perfectly normal individuals are being denied the privilege of providing for their families.

On the other hand, these same insurance companies are accepting many cases which show no glycosuria, but nevertheless are definitely diabetic.

We were led to believe in the past that the percentages of cases of glycosuria without diabetes, and of diabetes without glycosuria were insignificant, but such is not the case. In my series of 714 observations,[5] 13.8 per cent showed glycosuria, with normal blood sugar; and 18.3 per cent showed no glycosuria, with hyperglycemia. In basing the diagnosis of diabetes on urinary examination alone the possibility of error is therefore 32.1 per cent.

I have spoken of the ease with which a diabetic can render his urine sugar free. He can go a step further. He can also bring his blood sugar to normal by a low diet. There is one thing that he cannot do. He cannot change the type of his glucose tolerance curve, which is stable and therefore discloses his true condition.

CONCLUSIONS

1. Diabetes cannot be diagnosed by urinary examination alone.

2. Even blood sugar estimation does not suffice in all cases to establish the diagnosis of diabetes unless it is known that the individual in question has not been on a limited carbohydrate diet.

3. Glucose tolerance estimation establishes definitely the carbohydrate utilization of an individual.

4. Renal permeability for glucose must not be interpreted as true diabetes. The differential diagnosis must be established by the glucose tolerance test.

5. The present discrimination against people who show glycosuria should be abandoned by the insurance companies and the profession, and true diabetes should be accurately diagnosed by means of glucose tolerance estimation.

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Euclid Ave. at 93rd St.

"So your father is ill. I hope it is nothing contagious."

"Gee! so do I. The doctor says dad is suffering from overwork."

OPHTHALMIA NEONATORUM*

NEW FACTS REVEALED FROM A STUDY OF REPORTS

LOUIS LEHRFELD, A.M., M.D.†

PHILADELPHIA, PA.

It is very interesting to know, after years of practical application of preventive methods, just what has been achieved, more especially in those fields where legislation has been enacted to curb the spread of disease and to minimize the damage caused by it. In the case of ophthalmia neonatorum, which is well recognized by the medical profession as a dangerous infection destructive to the eyesight, and even known to enlightened laity as a preventable disease, statistics of recent years show that this infection is still a prevalent one and contributes a large proportion of the blind population in this country.

In 1918, I made a survey for the Department of Public Health of Philadelphia of the cases reported the preceding year (1917) with the view of ascertaining if the law requiring such report was influential in reducing the number of blind cases among children resulting from this infection. Seventy-one cases reported during 1917 were investigated. Of this number, reasonably accurate data were obtained from 49 cases. The remainder were not located or the information not satisfactory. Two cases resulted in complete blindness in both eyes, one in partial blindness of the right eye, two in disturbance of vision, as evidenced by small maculations in the left eye, and one of the same degree in both eyes.

END RESULTS OF OPHTHALMIA NEONATORUM CASES—1917

Opacity of Cornea		*Number of Cases Occurring*
Slight—¼ surface	Both eyes	1
	Left eye	2
Moderate—½ surface	Right eye	1
Extensive—¾ or entire surface	Both eyes	2

The measure of degree of blindness was rather arbitrary, as the amount of corneal opacity was taken as the index of destruction of vision. Since these cases were observed by an experienced public health nurse, they may be considered as reasonably correct.

Further study of the 49 cases showed that six were really not ophthalmia neonatorum since they occurred in persons at the ages of one year, two years, five years, eight years, nine years and twenty-five years. I cannot explain why the latter were reported by physicians as ophthalmia neonatorum. Bacteriological examination showed that the gonococcus was present in 16 cases and absent in three. No smears for studies were made in the remaining cases. Forty-three cases occurred, however, during the first month, of which nineteen occurred during the first three days, eight on the fourth day, one on the fifth day, one on the sixth, six on the seventh, and eight at various periods from the second to the fourth week.

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*Read before the Philadelphia County Medical Society.

†Assistant Surgeon, Wills Eye Hospital, Philadelphia.

DAY OF OCCURRENCE OF DISEASE (1917)

	Cases		*Cases*
At birth	7	First month	1
Second day	4	First year	1
Third day	8	Second year	1
Fourth day	8	Fifth year	1
Fifth day	1	Eighth year	1
Sixth day	1	Ninth year	1
Seventh day	6	Twenty-fifth year	1
Tenth day	2		
Eleventh day	1	Cases	49
Twelfth day	1	Unknown cases	4
Fourteenth day	1		
Third week	2	Total cases	53

STUDY OF CASES IN 1919—PHILADELPHIA

No analysis was made of the cases in 1918; but since that date, when venereal diseases other than ophthalmia neonatorium were made reportable, a more thorough study of each case has been made by the Bureau of Health.

During 1919 there were reported 60 cases, of which 27 were gonorrheal and 33 negative or non-gonorrheal. Those which were of positive Neisserian origin are as follows:

Color	White	17
	Black	10
Sex	Male	10
	Female	17
Eyes infected	R	8
	L	4
	Both	13
	Unspecified	2
Birth attended by	Physician	21
	Midwife	6
Reported by	Physician	6
	Institution	9
	Nurse	9
	Midwife	3
Incubation in days	1	7
	2	8
	3	3
	4	3
	5	3
	13	2
	Not stated	1
Prophylactic	Used	20
	Not used	7

STATISTICS, 1920

During 1920 there were reported 82 cases, of which 35 were positive for the gonococcus, and 47 were non-gonorrheal. The following is a compilation of the total cases:

		Gon.	*Non-Gon.*
Color	White	21	31
	Black	14	16
Sex	Male	18	21
	Female	17	26
Reported by	Physician	16	11
	Hospital	7	2
	Visiting-nurse	9	33
	Institution	3	1
	Midwife	0	0
	Anonymous	0	0
Eyes infected	Right	7	12
	Left	6	3
	Both	22	32
Prophylactic used	Silver	16	16
	Argyrol	4	3
	Unspecified	2	
	None used	13	18
Source of infection	Birth canal	27	0
	Mother	0	4
	Nurse	0	0
	Patient	0	1
	Other persons	0	0
	Irritants	0	18
	Undetermined	8	24
Births	Physician	32	40
	Midwife	3	7
Smears	Positive	35	
	Negative		47
Treatment	Hospital	13	6
	Home	22	41
Incubation in days	1	5	9
	2	6	5
	3	5	4
	4	9	5
	5	4	3
	6	2	2
	7	1	3
	8	2	6
	9	0	1
	10	0	3
	11	1	2
	Over 11	0	4

STATISTICS, 1921

There were reported 84 cases of ophthalmia neonatorum, of which 33 were gonorrheal and 51 non-gonorrheal in type. The accompanying table represents a comparative compilation of the gonorrheal and non-gonorrheal types.

		Gon.	*Non-Gon.*
Color	White	20	27
	Yellow	1	0
	Black	12	24
Sex	Male	14	23
	Female	19	28
Reported by	Physician	11	12
	Hospital	9	2
	Visiting nurse	11	37
	Institution	0	0
	Midwife	2	0
	Anonymous	0	0
Eyes infected	Right eye	1	16
	Left eye	4	5
	Both eyes	28	30
	Unspecified	0	0
Births	Physician	22	45
	Midwife	11	6

		Gon.	Non-Gon.
Smears	Positive	33	
	Negative		51
Treatment	Hospital	21	7
	Home	12	44
Incubation in days from birth	1	3	14
	2	6	5
	3	7	9
	4	1	4
	5	4	6
	6	2	2
	7	1	3
	8	3	1
	9	1	1
	10	2	2
	11	1	2
	Over 11	2	2
Prophylactic	Used	22	42
	Not used	10	6
	Unspecified	1	3
Drug	Silver nitrate	16	31
	Argyrol	5	8
	Unspecified	1	3
Day of disease treatment instituted	1	14	29
	2	7	12
	3	4	5
	4	1	2
	5	5	1
	6	1	0
	7	0	1
	Over 7	1	1

DEDUCTIONS FROM STATISTICS

The textbooks state that the average incubation period of ophthalmia neonatorum is three days. Fuchs claims it is rarely 4 or 5 days, and that cases occurring after this time are infections from soiled linens, hands of the nurse or mother. It is true that a large proportion of cases occur during the first three days, but there is positive evidence that the incubation of primary cases may be as long as two weeks. This may be accounted for by the fact that the use of a prophylactic may inhibit the growth of organisms, or that the gonococcus in genitals of the mother may be of low virulence. If these late cases of ophthalmia neonatorum were secondary, caused by infection from hands and linens, then why is it that gonorrheal ophthalmia practically never occurs in the nursing mother. Why should the baby's eyes be the choice of its development after delivery? It is reasonable to believe that secondary cases of infection may occur, more especially in institutions for infants where the disease may spread from one child to another by faulty nursing technique, but I am firmly convinced that ophthalmia neonatorum is essentially an infection from the birth canal.

The use of strong solutions of silver nitrate, say 2% or even 1%, is always attended by a more or less inflammation of the lids and conjunctivae which may mask the symptoms of an oncoming true ophthalmia, or may be mistaken by the nurse or physician, as a sign of infection. Since only a scant majority of cases occur during the first three days, it is essential that the prophylaxis be such as to combat also the late cases. I, therefore, suggest as a health measure the use of a prophylactic less irritant than silver nitrate and one which can be used over a period of at least three successive days. The use of one drop and one instillation of any medicine gives a false sense of security and safety. As is often the case, the one drop of silver nitrate, as commonly used, never reaches the cul-de-sacs of the conjunctivae because of the slippery condition of the lids of the newborn, or because the physician or midwife does not know how to make eye applications. If the Credé method is a positive method, why are there so many cases of ophthalmia following prophylactic instillation? A thorough and safe sterilization is more assured if the eyes are treated on several occasions rather than once, followed after each instillation by flushing the eye, using a large bulb eye syringe with boric acid or salt solution in preference to a medicine dropper.

It was commonly believed by health officials that ophthalmia neonatorum occurred largely in the practice of midwifery. In Philadelphia it is significant to note that 32 out of 35 positive cases reported in 1920, and 22 out of the 33 in 1921, occurred in babies delivered by physicians. A more startling fact is that a prophylactic was used in only 20 instances out of 35 in 1920, and in 22 instances out of 33 cases in 1921. If such omission occurs among the actual gonorrheal cases, there must necessarily be a large number of the 43,000 babies born annually in this city who do not receive this all-important prophylactic treatment. The physician who fails to use this recognized preventive is certainly guilty of negligence.

BLINDNESS FROM OPHTHALMIA NEONATORUM

It is the desire for the prevention of blindness that has caused the enactment of legislation providing for the reporting of ophthalmia neonatorum. In spite of our prophylactic measures, which have in the main been beneficial in curbing the spread of this disease in hospitals, yet it continues to prevail in small but positive numbers and blindness continues to result from it, as may be noted in the census of the schools for the blind.

NEW MEASURES ADVOCATED

I personally believe that more rational measures must be adopted for the prevention and treatment in order to reduce the prevalence of blindness caused by ophthalmia neonatorum.

(1) All expectant mothers should be under the care of a physician, a nurse or a health organization doing prenatal work. In the experience of the Division of Child Hygiene of the Bureau of Health, Philadelphia, not one case of ophthalmia neonatorum developed in 18,000 births during the last five years.

(2) The prophylactic toilet of the eye should be changed from one instillation and one drop of a strong silver nitrate solution to several drops of a bland but effectual antiseptic (such as 25% of argyrol) and repeated on three successive days after birth, followed by thorough flushing with a large bulb syringe.

(3) Every physician and midwife should be held to account for failure to use a prophylactic within 24 hours after birth. The number of cases of gonorrheal eye infections of the newborn which do not receive a prophylactic at the birth is much greater than generally supposed and these are cases under the care of physicians.

(4) To the birth certificate may be conveniently added a supplementary report as to the presence of sore eyes. This would give the health official immediate and more accurate information as to the prevalence of this disease.

(5) Reported cases should be followed up by the health authorities with the view of ascertaining if proper treatment is being given, and until the disease has terminated. This should be especially stringent among the colored race, which according to the last three reports of the Bureau of Health, contributes proportionately one-third of the true gonorrheal cases.

A summary of the statistical information collected is as follows:

(1) The average incubation period of ophthalmia neonatorum is three to seven days, but may be as long as two weeks.

(2) One instillation of any prophylactic is not a positive protection against the disease.

(3) A large proportion of the newborn do not receive any prophylactic instillations.

(4) Secondary infections of the gonorrheal ophthalmia are not common. A large number of the non-gonorrheal type are due to irritating prophylactics used in the eyes.

(5) Blindness from ophthalmia neonatorum has not been reduced to satisfactory proportions by the present methods of prevention, treatment and control.

It behooves the medical profession to adopt more effective measures of control and prevention of ophthalmia neonatorum, since the children blinded by the disease are living monuments of ignorance and neglect, and are proof of the failure on the part of the profession to eliminate this absolutely preventable disease.

1337 Spruce St.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

PITTSBURGH MEDICAL REVIEW—AN EARLY MEDICAL PUBLICATION

Dr. W. W. MACLACHLAN

In 1886, Dr. X. O. Werder founded the *Pittsburgh Medical Review*, as he considered the time was ripe for the establishment of such a medical enterprise. He, therefore, called together a small group of young physicians and surgeons who readily accepted his ideas and forthwith the Review was organized. The original group was composed of Drs. X. O. Werder, Peter McGough, J. J. Green, Adolph Koenig, J. J. Buchanan, Chas. S. Shaw and Thos. L. Hazzard. They represented the editorial board, the publishers and the financial backers.

The *Review*, costing one dollar a year, was published monthly, and was not unlike the present *State Journal* as to size. It was well edited, one may say fearlessly edited.

As time passed, the personnel of the editorial board changed, but its policy remained unaltered. Drs. Hazzard and McGough resigned and Drs. Pettit, Painter and Watson were added. From 1892 to 1897, following the reorganization of the editorial board, Dr. Adolph Koenig assumed complete control of the *Review* without any deviation from either its original ideals or policy. He carried the financial burden alone until 1897, when the *Pittsburgh Medical Review* became the PENNSLVANIA MEDICAL JOURNAL, the first state journal in America. Dr. Koenig retained the editorship for a number of years (and too much credit cannot be given to him for his unselfish work). It may be of interest to know that this transfer cost the State Society the sum of one dollar.

The founders of the *Review* by no means attempted its publication without due thought as to the policy that was to guide all its activities. The primary object was to supply a vehicle whereby the members of the medical profession of this community could publish the results of their work. It was also the desire to have all the then known laparotomies reported and a table compiled, so that as this operation was done, a complete list could be kept on record. The list was not for this city only, but for the whole surgical world. We must remember that at that time the opening of the abdomen was a somewhat rare event. Ethical medicine was to be upheld at any price, and in the advertising pages there was to be no sign of any secret or patent medicine.

The original articles in the early years are of more interest and it would appear that the more important are of a surgical nature. This is probably due to the fact that operative surgery was then coming into the foreground and that there were several very active young surgeons developing. The names most frequently seen are R. W. Stewart, X. O. Werder and J. J. Buchanan. It is of some interest to know that Werder was doing ectopic gestations in 1886. Stewart's articles were chiefly on g.u. surgery, while Buchanan's covered the wide field of general surgery. Howard Kelly contributed articles written while he was still in Philadelphia. Dr. Sutton had several papers on obstetrical and gynecological subjects.

In medicine, one can name but a few of the many writers. J. Chris Lange published a number of articles on a fairly wide range of medical subjects. They were well written and showed considerable philosophy. He wrote an interesting article on "Puncture of the Abdomen for Tympanites." It seems strange to us now how he avoided peritonitis. Adolph Koenig wrote on Pharmacology and Therapeutics, while Ayres, McKennan, Diller, Shaw, Burleigh and Moyer contributed medical subjects. There were four or five articles written by a Dr. George Hay—not our incoming president—which, to say the least, are very amusing and original.

Dr. Hay had the misfortune to have lost an eye and was a man of peculiar appearance. He was a man with a very scientific mind and of very bitter philosophy—a cynic of the most pronounced type. He was a chemist of very great ability, and many abstruse chemical problems were presented to him by the steel companies of that day, and he was called as an expert in poisoning cases.

In an article on "Deleterious Beer," he introduced his subject in this somewhat racy manner: "Let the fact be widely known and let fanatics make the most of it—I drink beer. Let there be no mistake about it however, I am an Edinburgh man, a temperance man, I don't drink too much beer. But I am of the opinion that when beer is sold to me it ought to be good beer, beer manufactured from malt and hops, and ought to contain no injurious materials."

In an article called "Milk Minus Cream," he further raised the question as to what became of the cream in the milk that was sold. In those days milk was drawn from a large can with the spigot at the bottom, the cream naturally rising to the top. Eventually, however, the cream would be drawn from the spigot, if the laws of physics were correct. Hay never was fortunate enough to get any cream and he wondered what became of it.

In a rather long article on "Who Are Quacks," he writes in a very tart manner on what he considers quackery in medicine. But probably his most astounding endeavor was a lengthy discourse on "The Economic Disposal of the Dead." This matter was certainly handled in an original style. He suggested three methods; Cremation, Boiling and Distillation. They are given in considerable detail and probably the following quotation gives most accurately an insight into his philosophy of life: "Sentiment must be got rid of if ever we are to arrive at sense in this matter. A nominal sum might be paid to the relatives of the deceased for each body handed over to the boiling establishment, which would be somewhat of a consolation for the loss of the living man or woman (if, indeed, such were really a loss), while the manure, after being manufactured as above indicated, would yield a handsome profit, after paying all expenses. But this method of treating dead bodies would completely abolish the business of the undertaker, the hearse with its "nodding plumes," and all the paraphernalia of woe would be things of the past on which account the method, with its manifest and manifold advantages is likely to meet with strenuous opposition from the quarter indicated. The young gentleman, when the dance is over, may lead his partner to the buffet and may there assist her to cake and wine and sandwich, the materials for producing which were nourished by the ammonia from the soft tissues of his grandfather and grown upon the bones of his grandmother."

His last article on "Natural Gas Fires and Health" was a plea to make gas fires more sanitary. The question was put to him whether the gas was in the process of manufacture then "in the bowels of the earth." His reply was that the earth, like corporations, "had no bowels."

The abstracts and reviews of foreign journals were very well done. They were well chosen, usually the advanced work which had some clinical bearing. They were not limited to a few lines. Pfeiffer's original article was reviewed shortly after the 1890 epidemic of influenza. Similarly, everything of moment in American medicine got its just dues. The county society meetings were reported in detail and some of the discussions are most interesting;

for example, the use of calomel in diphtheria. Drs. Lange and Green reported giving 120 grains daily for a few days without purging or salivation. Dr. Lange also stated that he had given a young boy 500 grains of calomel in 10 days without purging or salivation, or other ill effect. He maintained that this was almost a pathognomonic sign of diphtheria—tolerance for calomel.

The editorials were from the pen of Thos. S. Shaw. He wrote on many subjects which today are still important. He advocated strongly clinical clerking in the teaching of medicine, the establishment of dental dispensaries, the need of preventive medicine.

At the time of the *Review*, it was the only medical journal printed that in its advertising sheets did not carry patent medicine advertisements. It happened that the *Journal of the American Medical Association* did. What scathing remarks Shaw turned loose on the Journal! This was an almost continuous war until at the end the *Journal of the American Medical Association* was forced to change its policy. There is good reason to believe that the *Pittsburgh Medical Review* is responsible for the change.

The following editorials had reference to the *Journal of the American Medical Association:*

"The *Journal of the American Medical Association* is not a private enterprise. It is the property of the members of the body whose name it bears and it is conducted by men appointed for that purpose and paid for their services. Consequently, this publication is legitimately open to criticism and it invites and deserves censor for a course of procedure that touches the honor of the association that it represents."

"The plea of financial necessity cannot be urged, because this journal is supported by members of the Association and its existence is not dependent on the income from its advertising pages."

"The paper hardly rises above mediocrity and it reflects little credit upon the gentleman who conducted it and upon the association it represents. Then if we cannot have excellence, let us at least have honesty; if we cannot have brilliancy, let us at least have decency."

"If the jewel of consistency is to remain in the possession of the American Medical Association this abuse will be noted and it will be corrected by the unequivocal action of the association at its next meeting in Chicago."

"That monument to the honor and humanity of American medicine, the code of ethics, contains certain wise restrictions that must sorely try the patience of those who, for pecuniary gain or for popular notoriety, devise so many ingenious plans to violate the spirit of the code, while the letter is preserved."

"The most conspicuous of these violators of the spirit is of course the *Journal of the American Medical Association*. The inconsistency of this paper, at whose head stands one of the foremost of American physicians, and one who took an active part in the formulation of the code, has become a reproach to the body it represents."

"The brazen impudence of the *Journal* in upholding the code of ethics for the guidance of other people, while constantly violating it in its own conduct, passes understanding."

RENAL GLYCOSURIA

Dr. R. R. SNOWDEN

The condition spoken of as renal glycosuria is characterized by the constant presence of glucose in the urine, a normal blood sugar and absence of the signs and symptoms found in true diabetes. It is a condition that has been generally recognized only recently, due in large part to the fact that its diagnosis rests primarily upon the blood sugar findings.

The frequency with which such cases are now being recognized indicates that renal glycosuria is fairly common. At present the pathological basis for this condition is not understood and indeed it is not much more than a surmise that it is the result of some renal change.

Cases are reported that have been accurately studied and observed for from 10 to 17 years without showing any change for better or for worse. Cases are also known to many clinicians, by observation or hearsay, that are said to have had "sugar diabetes all his life, ate everything, always will and died of old age." It is very likely, then, that true renal glycosuria is a condition that is innocuous.

The difference between diabetes mellitus and renal glycosuria is the difference between day and night. If it is the former, the patient has a very dangerous condition and must undertake the most rigid and radical regime, directed most painstakingly, with the highest degree of medical skill; and even then the prognosis is doubtful. On the other hand, if the condition is renal glycosuria, it is very likely that the patient can practically disregard the condition.

A study of those cases presented in the literature by reliable men indicates that the diagnosis should rest on certain criteria, accepted by all. These criteria are:

1. A normal blood sugar and normal curve in the glucose tolerance test.

2. Freedom from clinical signs and symptoms of diabetes mellitus, such as loss of weight, hunger, thirst, etc.

3. The excretion in the urine of true glucose, in amounts which are, in a broad way, independent of the carbohydrate intake.

4. Accurate observation over a sufficient length of time to indicate that there is no change toward a true diabetes mellitus.

An interesting point is the apparent familial tendency, the condition being found in several members of a family. On this basis it has been advanced that renal glycosuria is congenital and can be inherited.

PARALYSIS OF THE SIXTH NERVE COMPLICATING OTITIS MEDIA; WITH REPORT OF CASES

DR. J. R. SIMPSON

During the year 1920, there occurred in the service of Dr. Day at the Eye and Ear Hospital, two cases of inflammation of the middle ear accompanied by ipsolateral paralysis of the sixth cranial nerve and severe pain in the head and face.

Gradenigo, an Italian Otologist, in a paper in 1907 first called attention to cases of purulent otitis media with severe frontal and parietal pains and abducens paralysis, and since then this group of symptoms is known as Gradenigo's syndrome.

Case 1: Mrs. M. C., aged 72, was first seen at the office on August 22, 1920. She gave a history of trouble with the right ear for five weeks, severe pain in the right upper jaw and frontal region which was almost unbearable and at times she complained of seeing double.

On examination there was found a profuse purulent discharge from the right ear, the perforation being in the antero-inferior quadrant, no mastoid tenderness, and inability to rotate the right eye outward.

On September 4, 1920, Dr. Day did a simple mastoid operation. He found areas of necrotic bone covered with granulation tissue rather extensively distributed, with here and there a bead of pus. There was seen a large cell deeply placed anteriorly and several extending upwards towards the middle fossa. A special effort was made to reach the deep cells. The lateral sinus was exposed for a short distance, its color being of normal appearance.

Culture from the wound showed streptococcus mucosus capsulatus. W.B.C. 14,200, polys. 86%, small 12%, trans. 20%.

Following the operation some pain persisted for four (4) days, after which she felt quite comfortable. She left the hospital at the end of two weeks, the paralysis showing some improvement and there being no more pain.

Case 2: J. S., a boy, aged 9, admitted to Eye and Ear Hospital on March 7, 1920, with a history of "flu" beginning seven weeks before, followed by severe headache and trouble in the left ear.

On admission there was found acute suppuration of the left middle ear and mastoid, paralysis of the left external rectus, and, signs of meningitis.

The boy was operated upon on the day of admission, extensive necrosis of the mastoid cells being found.

Lumbar puncture gave a clear fluid showing 19 cells per c.mm., 50% being polys. and 50% lymphocytes. W.B.C. 22,000.

His convalescence was slow. He remained in the hospital five weeks, and during this time frequently complained of severe pain in the left frontal region. The temperature ranged between 99° and 103° during the first week.

Gradenigo accounted for the paralysis of the abducens by calling attention to its isolated course in relation to the apex of the petrous portion of the temporal bone and the occurrence here of a localized pachy- or leptomeningitis.

CARDIOSPASM WITH ESOPHAGEAL DILATATION

DR. E. W. ZURHORST

Passage of the food begins with the voluntary swallowing act, but when the bolus of food arrives in the upper esophagus it is carried down to the stomach by involuntary contraction waves. This dilatation wave is transmitted to the stomach to permit the admission of food into the stomach, while the contraction surrenders to the pace-maker of the gastric peristaltic waves which at the cardiac end of the stomach originate at the rate of about twenty per minute.

There are many cases of intermittent hypertonic cardia, corresponding to the spastic states of the stomach and pylorus, in which the patient feels constriction at the level of the lower sternum. It is common for normal individuals to experience such after rapid drinking of ice water. This mild cardiospasm is a reflex condition and creates a desire to obtain relief by swallowing, thus causing a relaxation wave to pass over the cardia. In hypertonic states of the pylorus and stomach, either associated with pathology or reflex from pathology elsewhere along the digestive tract (principally the duodenum, gall-bladder and appendix), the cardia is frequently involved, but in these the condition is of longer duration and relief is obtained through the act of belching. Belching is under control of the will but it is difficult to resist when the patient knows it will give him temporary relief. When the patient makes the statement that belching is difficult it means simply that he makes several swallowing efforts before he can relax the cardia. The gas is belched forth only when the cardia remains open sufficiently long for the contraction of the stomach to send it back.

Coincident with persistent obstruction offered at the cardia there is developed a dilatation of the lower esophagus to accommodate the food retained. There are many cases of cardiospasm without dilatation, but why so few cases evidencing various grades of spasm develop stenosis with dilatation of the esophagus is rather difficult to comprehend.

Twenty-eight cases of cardiospasm have been analyzed for this study; two were carcinoma of the lesser curvature of the stomach in the cardiac portion but not involving the cardiac ring, twenty-two cases were intermittent cardiospasm without dilatation, and four were spastic stenosis with esophageal dilatation. Of the two cases of carcinoma, one was a woman of fifty-four years who had had dysphagia for one year, the other a man of seventy-four years who had had symptoms for eight weeks. Neither of these patients had dilatation, in neither could an Ewald or Rehfuss tube be introduced into the stomach, in both esophagoscopy showed spasm but no evidence of pathology, and on first x-ray examination the diagnosis of carcinoma of the stomach was not made in either case. It was only on repetition of the x-ray examination, following failure to obtain improvement, that the diagnosis of carcinoma of the cardiac end of stomach was made. Very careful examination of patients in the cancer period is necessary, since spasm of the cardiac ring may be a very early symptom when the pathology is high up in the stomach, and furthermore, instrumental dilatation may be disastrous if the cardiac ring itself is involved.

Of the twenty-two cases without dilatation thirteen were males and nine females. This is a group of young individuals. The age incidence of the males was thirteen to sixty-one years, average thirty-three years; the females seventeen to thirty-nine years, average twenty-five years. Pathology associated with this group was alcoholic cirrhosis of liver, gastric ulcer, valvular heart disease, hyperthyroidism (two cases) chronic mucous colitis (two cases).

The four cases of spastic stenosis all showed a marked dilatation of the esophagus with capacity of about a quart. Two of these cases were women and two men; their ages were forty-one, forty-two, forty-three and forty-four years; duration of symptoms three, four, seven and twenty years. The weight of three patients at onset is known, 195, 210 and 212 pounds. The physical state of these patients is very different from those reported by Jesse S. Myers from which he made his deductions that the condition is associated with the asthenic enteroptotic type of patient in which there is a congenital neuropathic predisposition.

The symptoms in all these cases are similar, loss of weight (average sixty-three pounds), difficulty in swallowing, feeling of something lodged behind the sternum, eructation of gas, regurgitation of food and mucus throughout the day but particularly after meals. Only one patient had vomiting of large quantities. Two patients had a cough which had been present during period of symptoms and was relieved by treatment. It was not possible to elucidate a definite determining cause in any case.

The method of treatment has been relief of the distention of the esophagus and gradual instrumental dilatation of the stenosis. The patients are put to bed and allowed nothing by mouth for a period of about ten days. Glucose enteroclysis, 500 c.c., with deodorized tincture of opium, 2 c.c., is given two or three times daily. The mouth and teeth must be kept clean. Until there is sufficient relaxation to permit the bougie to pass readily into the stomach the dilators are introduced through the esophagoscope. Clear view of the insertion of the dilator into the cardia is important, as otherwise the tip of the bougie may not find the cardia and simply be projected against the esophageal wall. Dilatation is performed every day or every second day, at first using a woven linen dilator and as more relaxation is obtained, passing increasing sizes of the metal olive bougie attached to a whale bone. After several weeks the esophagoscope may be dispensed with. After ten days, feeding of these patients is begun, giving at first semiliquid diet and after a few days soft diet, thoroughly masticated and eaten slowly. About the third day after commencing dilatation, medication directed toward relief of the spasm is given by mouth: sodium bromide in fifteen grain doses four times daily, and tincture of belladonna, commencing at fifteen drops three times daily, increasing the dose one drop daily until the patient evidences the drug effect. The dose is then continued at several drops under this dose.

In one patient, Mr. R., a duodenal feeding tube was passed into the stomach immediately after dilatation and the patient was fed milk through it. The tube was removed preceding each dilatation. This procedure is more satisfactory than the prolonged fasting method and would be of considerable advantage in the treatment of patients who have become emaciated from prolonged starvation.

The duration of treatment in hospital has been from three to five weeks. When dilatation has progressed to the stage that a number forty olive bougie is readily passed, the patient is instructed how to perform the operation and when he has acquired the ability he is discharged from the hospital with instructions to pass the bougie daily and to report back at intervals for examination.

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EDITORIALS

WE MUST OBEY THE LAW

Laws are man-made and as such are subject to frequent changes according to the needs and conditions of the times. Laws have for their basic principle the effort to prevent crime, to correct evils and to mark out a line of action, which must be followed by the individuals of the community affected by such laws. From time to time the lawmaking process affords an opportunity to witness the multitudinous changes, which in this country, particularly, seem to be the popular pastime. Were the conditions and the minds of men in the same attitude as existed in the early days, when the laws of the Medes and Persians were unalterable and irrevocable, there would be little need for such changes as have taken place in the reconstruction of the laws of the state and country.

There is a real crying need for a more general awakening on the part of the medical profession to become conversant with the existent laws, especially as they relate to the practice of the healing art, and the purpose of this editorial is to place squarely before the members of the profession the duty which rests upon every individual connected with this practice. This duty becomes more and more apparent when one surveys the ever-increasing number of bills that appear before the House and Senate of the Legislature of Pennsylvania and other states, which relate to the practice of medicine and the other branches of the healing art. We use the term "healing art" advisedly because it is not possible to describe in a short sentence the many varieties of practitioners who exist in this country under the guise of cults, and yet it is just for this reason that so much legislation affecting the healing art is required.

It is a very much easier step to place a law upon the statute books of the state than it is to repeal one, however prevalent the illusion is that repealing laws is a simple matter. A law when once made is more apt to be amended from time to time as a patchwork quilt or as the numerous additions to the house as the family grows than to tear down the old structure, purchase a new quilt, or repeal the law and make a new one.

The medical profession particularly, which is standing firmly upon the principles of scientific attainments, desires a high standard of efficiency, and with this thought in mind has endeavored to preserve the standards which they have attained during the past century. From time to time an effort has been made to interrupt this progress and break down the structure which has with hard labor been erected. The laws which concern the practice of medicine have been badly mutilated. This is a discouraging problem to contemplate.

However, we more especially want to point out the need of obeying the laws that are upon the statute books as an example to those who are endeavoring to persuade the public that they are able to do what we can do in the practice of the healing art through different methods, and all without the necessary preparation, thereby violating the laws of the state, as they are practicing medicine without securing a proper license. The effort to correct this tendency by legislation, giving these people the power to perform the same as others, must of necessity react upon our profession, so that whatever laws are on the statute books concerning our practice, which are restrictive or in any way disturbing, we must nevertheless conform to these laws, obey them and show by precept and example that we are law-abiding citizens, willing to conform to the necessary legal requirements for the protection and benefit of the people of the commonwealth.

Step by step have numerous laws in the past ten years been placed on the statute books which affect the practice of medicine, such as the Harrison Act, the Volstead Act, the various state and national regulations relative to reporting diseases, and others, too numerous to mention, which are of vital importance to our profession.

We must not be oblivious or ignorant of the provisions of these laws, but should become as well acquainted with them as is the man who practices law and is thereby able to discern their defects as well as to follow their precepts. We have discovered that one of the greatest opportunities to criticize the profession has been by pointing out the errors which have been made by our own members, and it is with the greatest of difficulty that in a discussion we are able to defend ourselves when so many violations of the statutes are presented against our craft. This condition should be corrected. Our profession should walk uprightly and follow precepts and examples as did the Medes and Persians, thereby obviating the necessity of saying—"We must obey the law."

TUBERCULOSIS

THE HISTORY OF TUBERCULOSIS

THE NEED FOR THE CONTINUATION OF THE STATE TUBERCULOSIS DISPENSARIES AND SANATORIA

Cuneiform inscriptions found in Babylonian ruins indicate that tuberculosis was known to the earliest civilization.

Democritus, who preceded Hippocrates, wrote an essay "On Those Who Are Attacked With a Cough After Illness." Hippocrates (400-377 B. C.), "The Father of Medicine," portrays the symptoms of phthisis in a manner that for centuries was unsurpassed, and his schools believed that the disease was curable in all stages. He regarded it as a fever (which might be accompanied by hemoptysis and pleurisy), due to the dropping of the pituita from the head into the lungs, causing ulceration. He noted the association of bulbous fingers with the phthisical habit.

Aristotle (384-322 B. C.) recorded the general belief among the Greeks that phthisis was contagious. Aretaeus (beginning A. D.) gave a clear description of tuberculosis and advocated sea voyages and the air of the country. Celsus distinguished tuberculosis from atrophy and cachexia and recommended the climate of Egypt, milk and sea voyages. Pliny (61-113 A. D.) lauded the healing powers of pine forests. Galen (130-200 A. D.) advised a milk diet and a dry climate for the treatment of tuberculosis and sent his patients to the higher lands of Phrygia.

Little knowledge was added by the Arabians or the writers of the Renaissance, but Fracastorius recognized very clearly the contagious character of the disease, regarding habitual residence with a consumptive as one of its most common sources.

Franciscus Sylvius (1644-72) was the first to describe accurately tubercles in the lungs. Richard Morton's "Phthisiologia" (1689) contains the recognition of the wide prevalence of tuberculosis with extensive knowledge of its manifestations, complications and contagious nature. Morton believed in cure in the early stage but warned against recurrence. Manget (1700) described, for the first time the miliary tubercle and Stark (1785) gave to it its proper pathological and clinical position. Sydenham advocated fresh air and, in the early stage, horseback riding. Auenbrugger invented percussion as an important part of physical diagnosis.

Bayle (1810) published the results of one of the most brilliant and complete researches ever recorded in pathology, which demonstrated the essential nature of the tuberculous process. He accepted the miliary tubercle as the starting point of the disease and described the stages of development, regarding it as a general disease of a specific nature.

Laennec(in 1811) further developed the idea of the unity of tuberculosis—that every manifestation of the disease in man, or in animals, was due to the same cause. Laennec (in 1811) published "De l'Ausculation Méditaté" in which he described tuberculosis anatomically, establishing a more definite relation between the presence of tubercles and consumption, advocating the identity of pulmonary and glandular tuberculosis pathologically. He gave the first careful study of the healing process and one of the first and best descriptions of the supta. He also gave a full account of the physical signs.

Rokitansky supported the views of Laennec but insisted on the susceptibility to infection of those with the phthisical habitus. Andral Skoda, C. B. J. Williams, Stokes and, in America, particularly Austin Flint, gave clearness to the description of symptoms and physical signs. Lebert described a so-called "tubercle corpuscle" as a non-nucleated cell in the midst of tubercle formation. Virchow expounded the pathological and histological structure of the tubercle, but caused great confusion by an attempt to disprove the specificity of the caseous tubercle, in which he saw one form of tissue necrosis. This idea was further developed by Niemeyer.

Klencke (1843) inoculated rabbits with tuberculous material and at autopsy, twenty-six weeks later, found disseminated tuberculous deposits in liver and lungs. Buhl (1857) brought forth the doctrine of the origin of miliary tuberculosis as the result of the distribution through the circulation of an agent derived from an area of infection.

Villemin (1865) introduced infective material from tuberculous tissues and sputum into animals, non-tuberculous pus into other animals and caseous matter from cows into others. The results of his experiments confirmed the theory of specificity and demonstrated the apparent identity of bovine and human tuberculosis. Cohnheim followed Villemin by the injection of tuberculous material into the anterior chamber of the rabbit's eye, thus affording a means of inspection of the gradual development of the pathological changes. Chauveau (1868) proved that pulmonary tuberculosis could be brought about by the ingestion of tuberculous material without the production of any injury to the digestive tract.

Robert Koch (in 1882) discovered the micro-organism in tuberculous tissues and, by Erchlich's method of differential staining, showed its presence in all parts of the body, demonstrating its etiologic relationship to man and to animals and its absence in other than tuberculous conditions.

S. G. Dixon (in 1889) published results of his discovery and observations of the atypical or attenuated forms of the tubercle bacillus from which a watery extract for the specific treatment of the disease and, adopting a minimal dosage at that time, maintained it with successful results during the period of intense reaction against the tuberculins of Koch and others to the present day, when this treatment is more widely recognized than ever before.

Karl Pearson applied the new biometric methods to the study of the statistics of inheritance in tuberculosis and concluded that there is an hereditary diathesis. Cornet demonstrated the prevalence of tubercle bacilli in dust and claimed that the chief means of infection was by inhalation. Flugge modified this view by showing that the danger was not so much from dust in the air as from infected droplets of mucus and saliva thrown off from the patient in the acts of coughing, speaking and sneezing. In 1901 Koch denied the susceptibility of human beings to bovine tuberculosis. The reports of German and English commissions showed the contrary. Von Behring discredited dust-borne infection and held that children are infected, chiefly, through cows' milk. This has been substantiated in America by the work of Theobald Smith.

Space does not permit the mention of the numerous clinicians, pathologists and sociologists who are working with renewed enthusiasm at the present time. However, this article should not close without mentioning the names of Brehmer who, in Germany, established the first sanatorium for tuberculosis, and Philip, of Edinburg, who established the first tuberculosis dispensary in 1887 and announced its functions in the service of the community.

This is an opportune time to call the attention of the physicians of the state to the importance of the continuation of our state tuberculosis dispensaries and state sanatoria. Owing to the financial status of the commonwealth it may be necessary to reduce the budgets of the various departments, but there is no more worthy cause for the expenditure of money than the care of the tuberculous who are unable to care for themselves. F. F. D. R.

A GLIMPSE INTO THE PAST

A most interesting article on the *Pittsburgh Medical Review* appears in the department of the Pittsburgh Academy of Medicine, in this issue of the Atlantic. This forms an illuminating prologue to the history of the Journal written by the late Dr. Cyrus Lee Stevens, former editor, which appeared on page 560 of The Pennsylvania Medical Journal for May, 1921.

It is always fascinating to trace a stream back to its source, so in view of the latest development of the Journal, this article is especially timely. All honor to the men who had the courage to start the publication, contributing the copy, the labor connected with the details of publication, and assuming the financial responsibility. It took vision to accomplish the results they obtained, and it took a mighty amount of good hard work. All honor to the men who, when the funders relinquished their ownership of the Journal, took over the burdens and carried them for years without adequate support, without sufficient interest on the part of their readers to lighten their tasks, plodding along over the wearisome details, oftentimes without sufficient appreciation—All honor to our pioneers! May the visions for the future of the Journal of those now guiding its destiny not prove to be mere mirages! May the Journal continue to grow and develop and be worthy of its past!

Read the above-mentioned article appearing in this number. Some of the subjects discussed in the *Review* are as live to-day as they were when first published. Indeed, we suspect that the cream Dr. Hay never got was put into cold storage to sell to us to-day at the increased prices prevailing! If so, would not this provide a good subject for the annual "investigation" by Congress?

Would that more men could be secured to continue the good work of the days of the *Review* in abstracting the many good things that come to the editorial desk! This department could with profit be stressed to a considerably greater extent, and the editor should be glad to enlist volunteers.

If virtue is its own reward, the JOURNAL might be excused for patting itself on the back a bit. Read—"At the time of the *Review*, it was the only medical journal printed that in its advertising sheets did not carry patent medicine advertisements. *It happened that the Journal of the American Association did.* [Italics are ours.] What scathing remarks Shaw turned loose on the *Journal!* This was an almost continuous war until at the end the *Journal of the American Medical Association* was forced to change its policy. There is good reason to believe that the *Pittsburgh Medical Review* is responsible for the change." Is further comment indicated?

It does us good sometimes to review the past. It acts as a balance wheel, as a stabilator in traveling the rough road to the future that we can ill do without. We must not let the past be more glorious than the future; the price of retrogression is too great. Therefore, "To arms, ye brave; your sword unsheath"—you know the rest of it! M. S. B.

THE PHYSICIAN'S RESPONSIBILITY FOR LAY EDUCATION

It seems that the medical profession grasps only with extreme difficulty the fact that its members are their brothers' keepers in a health sense. Whether it is inertia, a fear of seeming to advertise their wares, or what not, doctors seem exceedingly averse to any attempt to educate the public in common-sense views as to scientific medicine.

This is neither wise nor kind. We must not forget that medicine is a highly specialized science, and even though a man may be well educated in general, if he has not had an opportunity to imbibe the medical point of view, his ignorance on the important subject of health may be abysmal. Indeed, the ignorance of common-sense, every-day medical subjects on the part of our average citizen is simply appalling. True, we teach physiology and hygiene in our public schools, but some way we fail to hitch it up with the practical problems of life. We fail to "sell," to "get across" to the public what it is we are trying to do. The people in general cannot understand that the profession is working for the people's own benefit. They cannot get away from the idea that doctors are just "coining money," that they are ready to grab the last penny from any poor duffer that is unfortunate enough to get in their clutches.

We *must* change this point of view some way. We *must* get the people to understand that while, just as in every business and profession, there are some grafters and crooks, the rank and file of the profession are well-meaning gentlemen who are really desirous of helping their patients, as well as the people at large. We *must* get them to see that the medical profession as a class are their real friends, that our opposition to quacks and cults is not a financial one, but due to the honest and earnest belief that their proponents are not honorable men who desire the welfare of the people, but at best deluded cranks, and at worst rascals who are after the ultimate dollar they can squeeze from their dupes.

We *must* emerge from our isolation, realize that the proper kind of advertising (not advertising of personal merits and abilities, but advertising of our ideals and aims and achievements as a profession) is not unethical, and embark on a campaign to secure the understanding and coöperation of the public in place of their present antagonism, open or thinly veiled, or their indifference. This can be done, if we will just forget ourselves for a little while, just drop our own indifference, forget what people may say about us, forget our too great professional dignity, and go after this really big thing that is now in our power to grasp. Let us do it now. To-morrow may be too late.

The American Medical Association is making an effort in the right direction, in their publication of *Hygeia,* their new lay magazine, the first number of which appeared in April. Let us support this, by our contributions, by our subscriptions, by recommending it to our patients.

The State Society is also making an effort in the right direction through the appointment of the Committee on Public Relations. This committee has just put on a state-wide campaign against diphtehria. It is still too early to estimate the good done by this campaign, but it is scarcely too much to expect that in every county where the doctors all coöperated they found the laymen ready to go half-way, and that the good done will appear for many a month to come.

Such activities as these are but a start in the right direction. Let us not weary of good works, but by constant and gentle pressure gradually secure the confidence of the public that our fathers seemed to have, and that some mysterious modern influence seems lately to have weaned away from us. M. S. B.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

THE FINANCIAL SIDE OF A PHYSICIAN'S LIFE

FEES—COLLECTIONS—SAVINGS—INVESTMENTS—AND SAFE SPECULATION

LAMBERT OTT, M.D.
PHILADELPHIA, PA.

It may seem ludicrous or the work of supererogation to discuss the financial side of the physician's life, but when we review this life of labor and sacrifice, and the large portion of work charitably given and much service rendered and unpaid for by the unscrupulous, is it not time we collectively considered methods and means to improve our financial status, so that, when our waning energies presage lessened earnings, there is accumulated a modicum whereby we can spend the evenings of our lives in ease and retirement. In my observations I find the average estate of a lifetime of the practice of medicine—30 to 40 years amount to such meager sums—five thousand, ten thousand, seldom thirty thousand to fifty thousand, and a general average of fifteen thousand dollars—a sum bearing so small an income at 5% or 6% that it is insufficient to support a small family, even stintedly, in a semi-respectable manner. The wealthy doctor is an exception; and if he possesses means far above the average holdings of the general run of physicians, he has either benefited by the marital tie, or has been made the protégé of some extremely wealthy family, which appreciates the ennobling elements of the qualified conscientious physician by showering some of their surplus on him, in order to aid them in maintaining good health, so that he fills the position of the German appellation, Leib-Artz. In another case he may have been favored by some opportunity which by chance presented itself, and was shrewd enough to divine its promises; then by association with sterling business men, guiding their plans to a brilliant and successful issue, he became one of the beneficiaries. Or fortune may have favored him, throwing an inheritance into his lap, which he wisely nursed and strengthened by careful living and judicious investments.

But we do the medical mind an injustice by claiming that either small or colossal fortunes possessed by them are obtained by some fortuitous circumstances or by some element of chance; for in my personal experience I have known physicians who possessed a high order of business acumen and who knew the value of the primal saving, the laws of accretion, accumulations, careful investments, strengthening the principal, avoiding spectacular speculation, and never permitting their living expenses to reach too close to the margin of their incomes. When I review the past of some of them whom I have personally known many years I find they were good family men, highly honorable, socially agreeable, but not frittering too much time away in social outings, and who, in their *"Tout ensemble"* embodied the trite saying of the distinguished Chauncey Depew, "Stick, dig and save."

It is an old question as to why the physician is such a poor business man. My answer is that he carries the major burdens of mankind on his shoulders: the sickness and sorrows of his patrons; often unreasonable expectations on the part of his patients that he must alleviate or remove all their ills, even if incurable; and above all the irregularity of his life—all hours of the day and night in demand, constantly dealing with life and death, and often in the much broken rest the anxieties of the day crowd sleep from his mind—unrested, unrefreshed, but undaunted, and with a renewal of his trials and responsibilities besetting him, variable and keen, sometimes heart-breaking and saddening—how can he, with such nerve tension and strain, gain and retain any business sagacity, when his conscientious endeavors are placed at all times in and among the shadows of the triple medley of pain, sorrow, and death?

Because of his attention being riveted on the adverse side of life, which demands concentration and responsibility, he does not acquire that protective experience which every business man —even an unlettered one—gains after a time, and thus shielded by the suggestions of untoward problems of the past, he quickly discerns a hyperbole of promises, and soon learns to sift the chaff from the grain. We physicians do not barter and sell or directly advertise. Our results at the bedside either mar or make us, and our over-garrulous patients carry the propaganda of praise or derogation among their friends and strangers. To please all is impossible, but to be natural and conscientious and well-informed is easier and more winning than to ape some successful progenitor or colleague who evolved eccentricities through the inflations of his skill and success. The banker receives and protects your money and studies safe and durable investments. With his abbreviated hours he is only in contact with the material, less fraught with anxiety and some little responsibility; therefore, calm study of conditions enables him to procede wisely to decided success. But analyze the elements surrounding the merchant and the professional man, especially the physician, and you will concede the latter is constantly on the turbulent waves of a sea of human abnormality—haste, fear, speedy judgment, impending demise, and the placating of those concerned, who are often troublesome factors besetting our honest efforts in the sick room.

We now come to the question of fees.

On my way to London several years ago I stopped in Southampton for a day, and in my wanderings I saw the sign:

Chemist and Apothecary; Teeth Extracted.

I made a minor purchase of the proprietor and after a few casual remarks, asked him about his sign, "Teeth Extracted." He replied, "Oh, yes, you know"—pulling from under the counter a roll of complete extraction forceps—"we do much of this, and it has been the custom here for many years." I then asked him, "What are your fees?" He replied, "That depends upon the color of the cloth; a sixpence or nothing from the poor, and two or more shillings from those better able to pay."

Philadelphia is noted for its small fees on the part of doctors. Now we charge more, and should have more, since all things are higher in price, and our fees should be *correspondingly more*. Since the war, the public seems to concede that the fees should be greater than in pre-war times, and nearly always cheerfully responds to the advance. Let those of superfluous wealth pay big fees to compensate for the vast amount of work given to those charitably needy. The public cannot go to Wanamaker's and obtain clothing without paying therefor, but they can go to the hospital and obtain, gratuitously, a major operation, which should bring the surgeon several hundred dollars. This sad state of affairs we have brought on ourselves and have educated the public to look upon this gratuity as their inalienable right.

As to collections: Keep your books carefully and accurately. Thrice blessed is the physician who has a good helping wife to assume this labor—which is drudgery to the doctor—and cooperates with him in maintaining the business side of his calling at a high and successful tide. Send bills monthly, and in those cases where there is no response after a reasonable time, send a reminder. Usually it is followed by a prompt reply. When a third appeal is not successful, go in person and ask for what is rightfully yours. The affluent are not always the most prompt in settling their accounts; and how often have I had to go to the office or counting house of the semimillionaire and ask for a liquidating of my long-standing account. Some take a pride in paying promptly, whilst many ignore your demand in a spirit of indifference, as if it were an unjust earning. Doctors who follow their accounts assiduously—diplomatically but firmly—have their homes paid for, money in the bank and some income on invested capital. Timidity in collection will soon find you on the wrong side of the ledger and it will eventually be all labor and no returns. In a large department store where I have had a charge account for 35 years and always paid the day the bill was rendered, there was sent to me in the middle of the month, a sharp reminder on a small account overlooked because of serious illness in my immediate family. They were right, and I at once wrote an apology with the necessary check enclosed. At the same time, and under similar circumstances, a monthly bread bill had not been paid, which was due the first of the month. Six days thereafter the collector came. My good wife happened to go to the door, and was more than offended. I overheard the wrangle, promptly paid the account with an apology and requested him always to call if his bill was not paid within a few days. This department store and fairly large bakery have the best teams on the street, serve you with clean, wholesome food and commodities, have ample credit, well-paid and satisfied employees, and the proprietors have their summer cottages and a stable business—and why? *Because* they promptly collect, avoid long credits and have practical and business methods. Examine a business on a cash selling basis: chain grocers, street car companies, cash-and-carry stores, as they call them in the Western cities—all prosperous, happy, successful, because of no credits. Why should we not profit by this observation? And if we are of a class of small fees, then so much more is it necessary to get this fee at once and salt it away in a safe investment where it will grow and multiply.

No reasonable patient who trusts you with his life and that of his family, will take umbrage at your calling to collect the money due you. If he does, he is not fit to be the patient of a respectable doctor, but should and usually does have his leg pulled by the charlatan, who calls for his fee in advance and then promises a series of treatments which he knows will not cure the disease. But what does he care; *he has the money!*

All our grandiloquent and postprandial orators, in declaiming the nobility of the profession, advise us to keep clean, keep abreast of the times, be noble and generous, merciful and soothing, sympathetic to the sick and suffering; but most of them forget to add, "Take good care of thyself in a business way, so thou wilt have something to lean on when the evening of life is upon thee."

Poor Richard's philosophy says:

> For age and want save while you may;
> No morning sun lasts a whole day.

Savings: If you make a dollar, save twenty-five cents; if one hundred dollars, put away one quarter thereof. Unless you begin the saving habit early in life, it will not come or cling to you later. If you begin by being extravagant early in life—and remember, early impressions are lasting—the tendency is more likely to grow faster (to your disadvantage) than the saving inclination; also bear in mind contingencies in life which interrupt one's earning capacity. If no provision is made while the golden flow is in full glamor, you will find yourself and family in the lurch, with creditors pressing and landlords calling while you are on a bed of sickness. Where is there a more depressing picture, a more pathetic scene to aggravate your illness and prolong your suffering?

Let it be an obsession to dwell moderately on the following possibilities: an unexpected, brief or long, interruption in your vocation; slack times; tardy payments; increased living expenses; family growing larger and more expensive; vacillating and insecure patrons; occasional dissatisfaction; and so on, these shadows may be multiplied. With all the above eternally threatening you, what will prod you quicker to frugality than this ominous cloud, with its trail of disappointment and suffering?

You cannot advance if you do not save. You are illy prepared for the ease and retirement of later years, which all physicians really deserve, and the pangs of severe retrenchment and the curtailment of comforts when most needed will be your dessert, if not nursing and practicing the saving habit early. I have known doctors who had showered on them property without decided effort, money in abundance, either by inheritance or marital tie, who cultivated extravagance, expending without judgment, catering to the admiration of the fawning, not giving a thought to the fact that all unnatural procedure must end in disaster, thus either shortening their lives or thrusting themselves into poverty—and woe betide them, with their money and popularity gone, friends forsaking them, and the isolated wreck merging into the foolish, forsaken and poverty-stricken old man ready to die and be forgotten.

What can one say as to investments? Go to your banker for advice—*not to friends*. Beware of the friend promoting a new thing, unless it be in a line you fully understand—and keep a watchful eye on the future management! When a broker sends you a telegram at midnight (and it is a psychological procedure) of something good, in which you are asked to invest, stop, consider, go slow, and see your banker—and then do not bite. Some years ago, when a much younger man, I lost five thousand dollars to the tune and allurement of a midnight telegram replete with wonderful promises.

How, then, shall we invest our savings? Buy first mortgage bonds on real estate in a growing neighborhood, trust company stock and reliable railroad stocks, varying your investments, so when one weakens or lapses, the other may be growing stronger at the same time. But there are changes—ups and downs—and when invested capital is scattered, so to speak, not too much in any one thing, you will have the satisfaction of having many items getting stronger, to compensate for the lapses or weakening at other sources. Even with good advice and judgment you cannot always invest successfully, but study reliable financiers, honest men I mean, and even consult them when possible, and they will guide you aright.

Women are the most inconsiderate in ignoring and safeguarding the principle. How often have I advised them to reinvest a small share of their income and thereby stabilize the principle. I recall a young and very sensible woman who had an independent income from 6% city loans and whenever her check was forthcoming, her many purchases were seemingly needless. I reminded her that these loans would in time be paid off, and such favorable investments would not be obtainable. She laughed at my advice, and later, when the bonds were paid, she at once rushed to a real estate agent, and he advised her to buy small properties, which she did. Instead of those biyearly checks, she received repair bills and a small balance of the rent. You can imagine her amazement at the difference in her returns.

Permit me to be more specific as to real estate investment. Business property is a better purchase than private dwellings. It enhances in value more than residence property. The neighborhood aids the occupant in paying your rent. Money comes in large and small amounts from many people, thus insuring your rental. Corner properties have more probabilities than inside properties. If you buy improved lots or land, study the trend of the growth of population and always cling to the line of transportation. A doctor should not let a mortgage remain on his property any length of time if he is holding it as an investment. Pay it off, have it clear, and when untenanted for a time, as property naturally is, there is less to worry about. But to control a piece of property having a decided speculative value, a mortgage as large as it will bear, will aid you in making a quick turn. It also has a second advantage in requiring a small amount of capital. Where to buy and what to buy is a matter for sound judgment and study. Do not be timid when you see a good thing, even with only a little money at hand try to gain control and then have the rental return aid you in carrying it. When investing in a business neighborhood, remember the old German proverb which says:

> "Where the Jews buy, you buy too;
> If the Jews are leaving a neighborhood, you leave too."

Philadelphia real estate has been hampered by high assessment and burdensome taxation. Secondly, repairs are more expensive than at any time in the history of realty investments. A fair rental income is often consumed by the foregoing charges. Because of this drain, the large holders of real estate have been selling wherever marketable. If I have been a little successful in buying property, it was, in several instances, in buying what no one else wanted. My two most successful ventures were made under the above circumstances. Business developments have an invariable trend, and if one can discern the direction of this growth, a purchase in anticipation of your conclusion will often result favorably.

When is speculation safe? Only when you buy property, either personal or real, outright; no mortgages, no mechanic's liens, no back taxes, no stocks on margin—this is what I call safe speculation. Unsafe speculation—buying stocks on margin—is unsafe and hazardous, and in the end you will be the loser. You may gain several times, which will stimulate you to go further, and when filled up with marginal purchases, the crash comes and you lose all.

When the late Anthony Drexel was asked by friends what to buy speculatively, he replied: "Rather play poker."

May I, in conclusion, add a few aphorisms: Be content with less or little; obtain more, gradually and safely. One cannot acquire the colossal fortunes of the Morgans, Goulds, Rockefellers and the like. These men are phenomena, who divined and embraced rare opportunities. I dare say their wealth grew to such proportions, even beyond their wildest dreams. Big fortunes rear unhappy families and worthless children; the incubus of the day in America, is the children of the rich. A substantial and round income, procuring plain comforts, not permitting extravagances, amply providing for the day when the earning powers are at a minimum, is to be desired, and associated with this modest income, a sincere, plain and modest life. Being and acting what nature made you—kind and charitable to all, and reverent to the poor and humble, with kind words and kind deeds as a part of your daily life—you will be a man after God's own heart.

COMMUNICATION

The Atlantic Medical Journal, Harrisburg,
Pennsylvania.

Dear Editor: The Northampton County Medical Society has endorsed and passed unanimously the inclosed resolution. The resolution speaks for itself. It is our hope that you may concur with us in the matter under consideration and give the same publicity. We are,

Very respectfully,
The Northampton County Medical Society,
Victor S. Messinger, Secretary.

April 21, 1923.

Resolutions Submitted to the Northampton County Medical Society, April 20, 1923:

Whereas, The diagnosis of disease by laboratory methods, instead of being confined to physicians trained in medicine, is being exploited by lay technicians and commercial houses; and

Whereas, There is danger of this specialty in medicine becoming degraded by unseemly and blatant advertisements of commercial diagnostic laboratories now appearing in certain medical journals; therefore be it

Resolved, That the status of the clinical pathologist and the radiologist is on a par with that of the internist, surgeon or other specialist in medicine and conformable to the same code of ethics and high moral standards;

Resolved, That the publication of advertisements calling attention to the special merits of a particular laboratory or announcing prices of various laboratory examinations are contrary to good taste and subversive of the ethics of the practice of medicine;

Resolved, That the Northampton County Medical Society requests the *Journal of the American Medical Association,* the official Journal of the Medical Society of the State of Pennsylvania and other reputable medical periodicals to bar the advertisements of commercial diagnostic clinical and radiological laboratories from their advertising pages, permitting only licensed graduates an insertion of their professional cards, giving, but the name, specialty and address;

Resolved, That in the interest of the patient and for the advancement of scientific medicine, encouragement should be given to the establishment of resident clinical pathologists and radiologists in all communities where the population and number of physicians warrant specialization in these fields of medicine.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

REDUCED RAILROAD FARES TO PITTSBURGH

Through the enterprise of Dr. J. A. Hawkins, Pittsburgh, Chairman of the Transportation Committee (a subcommittee of the Committee on Arrangements) for the 1923 Session of our State Society in Pittsburgh, October 1-4, 1923, a reduction to one fare and one-half will be offered to our members on the certificate plan.

This is a concession that we have not been granted for a number of years, and is contingent this year upon the attendance of not less than 250 members of our Society or dependent members of their families who hold certificates which have been issued by the railroad ticket agents at the various starting points. Be sure when purchasing your going ticket to request a certificate, *not a receipt*. Immediately upon your arrival at the Pittsburgh Session, present your certificate for endorsement by the Secretary of the State Society at the Registration Desk.

If 250 certificates, the necessary minimum, are presented and duly validated, you will be entitled to a return ticket, up to and including October 9th, at one-half the regular one-way fare from the place of meeting to the point at which your certificate was issued.

SPLENDID RECORD

The Medical Society of the State of Pennsylvania had 7,327 members in 1922; on April 27, 1923, 7,026 members had ben reported to this office as having paid their 1923 dues. This is 96% of the 1922 total membership.

These results were achieved largely by the enterprise and efforts of the various county society secretaries.

The following list indicates the approximate percentages paid to date by various component societies:

Bedford	100%
Butler	100%
Clarion	100%
Clearfield	100%
Huntingdon	100%
Lebanon	100%
Lycoming	100%
Mifflin	100%
Monroe	100%
Montour	100%
Perry	100%
Susquehanna	100%
Warren	100%
Wyoming	100%
Cambria	98%
Montgomery	98%
Westmoreland	98%
Allegheny	97%
Bucks	97%
Fayette	97%
Adams	96%
Carbon	96%
Clinton	96%
Elk	96%
Greene	96%
Indiana	96%
Delaware	95%
Franklin	95%
Somerset	95%
Berks	94%
Erie	94%
Lehigh	94%
Schuylkill	94%
Union	94%
Washington	94%
Armstrong	93%
Blair	93%
Crawford	93%
Jefferson	93%
Columbia	92%
Luzerne	92%
Northampton	92%
Potter	92%
Chester	91%
Cumberland	91%
Dauphin	91%
Juniata	91%
Lackawanna	90%
McKean	90%
Northumberland	90%
York	90%
Beaver	89%
Center	89%
Mercer	89%
Philadelphia	89%
Venango	89%
Bradford	88%
Lawrence	86%
Sullivan	85%
Lancaster	81%
Tioga	81%
Wayne	73%
Snyder	66%

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to April 20th:

ADAMS: *Death*—James G. Stover of Bendersville (Coll. of Phys. & Surg., Md., '92), April 10, aged 54.

ALLEGHENY: *New Members*—Willard E. Austen, Mercy Hospital; Isador K. Gardner, Cheswick Apt., McKee Place; Alfred T. McElroy, 2854 Perrysville Ave., N. S.; Harry E. Canter, 522 S. Winebiddle Ave.; Harold J. Byron, Eye & Ear Hospital, Fifth Ave.; Leo H. Criep, May Bldg.; Merle R. Hoon, Jenkins Arcade; John O. Woods, 4634 Fifth Ave.; Edmund C. Boots, Highland Bldg.; Mortimer Cohen, Magee Hospital; Samuel Goldstein, 1801 Center Ave.; Benjamin Levant, 1204 Fifth Ave., Pittsburgh; Thaddeus J. Telerski, 300 Ninth St., New Kensington; Louis Tuff, Mayview; Charles R. Smith, 241 E. Eighth St., Homestead; Earl S. Duncan, 310 Corbet St., Tarentum;

Emmett D. Boaz, Universal; John T. Allison, Harmarville. *Death*—Charles Lindsay of Pittsburgh (West. Res. Univ., Cleveland, '79), April 10, aged 66.

Beaver: *Removal*—Norman C. Ochsenhirt from Enon Valley to 1417 Adams St., Pittsburgh.

Berks: *New Members*—Frank P. Werner, 143 N. Eighth St., Reading; Willard H. Spear, Robesonia; Henry A. Gorman, State Sanitorium, Hamburg.

Bedford: *Reinstated Member*—William P. S. Henry, Everett. *Death*—Thorne Cornelius of Riddlesburg (Coll. of Phys. & Surg., Baltimore, '02), recently, aged 49.

Blair: *New Members*—S. W. Miller, 726 E. Walton Ave.; Louis Lass, 1309 Twelfth Ave., Altoona.

Chester: *New Member*—William M. Riley, Downingtown. *Death*—D. Edgar Hutchinson of Downingtown (Med. Chirurg. Coll., Phila., '05), recently, aged 41.

Clearfield: *Resignation*—James B. Rucker, Toledo, Ohio. *Death*—Senes E. Hayes of Byrnesdale (Med. Chirurg. Coll., Phila., '96), March 20, aged 65.

Cumberland: *Deaths*—Anna Galbraith of Carlisle (Women's Med. Coll., Phila., '84), recently; Enos K. LeFever of Carlisle (Univ. of Penna., '94), March 28, aged 55.

Dauphin: *Transfers*—William R. Rothe, Harrisburg, from Venango County Society; Harold F. Lansche, 502 N. Second St., Harrisburg, from Cumberland County Society.

Delaware: *Reinstated Member*—Everitt H. Dickinson, 67 Owen Ave., Lansdowne.

Erie: *New Members*—J. A. Dinnison, 325 W. Twenty-sixth St., Erie; Russell S. Anderson, Wesleyville. *Death*—John J. Bell of Erie (Coll. of Phys. & Surg., Balt.), March 16, aged 54.

Fayette: *New Members*—George R. Glass, Uniontown; John M. Gemmill, Belle Vernon.

Huntingdon: *Removal*—Gladys W. Newlin from Huntingdon to 1021 Mulberry St., Scranton (Lack. Co.).

Indiana: *New Members*—Joseph S. Wilson, Marion Center; F. J. Kellam, Ernest; William L. Benz, Blairsville. *Removal*—Malcolm L. Raymond from Waterman to Homer City.

Jefferson: *New Member*—George Boehm, Eleanor. *Removal*—Norman C. Mills from Eleanor to Clarion.

Lackawanna: *New Members*—L. D. Griffiths, 722 So. Main Ave.; William A. Ryan, 935 Capouse Ave.; M. J. Shields, 717 Pine St.; James J. Reilly, 617 Adams Ave.; H. Carl Dimlich, 818 Richmond St.; Raymond A. Werts, 211 Jefferson Ave.; Carl T. Houlihan, 135 Parker St., Scranton; Leonard L. Friedman, Carbondale; Richard D. Roderick, Box 73, Jermyn; George J. Flannely, Throop; P. A. Lonergan, Dickson City. *Reinstated Members*—Edward H. Kelly, Miller Bldg.; Philip J. Lewert, 211 Jefferson Ave.; Albert J. Winebrake, 440 Madison Ave.; R. W. Williams, 827 Green Ridge St., Scranton; M. E. Malann, Carbondale; J. S. Murrin, Carbondale. *Death*—John B. Grover of Peckville (Albany Med. Coll., '92), Feb. 21, aged 55.

Lancaster: *Removal*—Charles S. Duttenhofer from New Holland to Churchtown. *Death*—Miles L. Davis of Lancaster (Bell. Hos. Med. Coll., N. Y., '70), March 8, aged 78.

Luzerne: *New Members*—Francis B. Eveland, 355 E. Market St., Wilkes-Barre; Martin L. Connors, Pittston.

Lycoming: *Transfer*—A. Rowland Kirch of Williamsport from Montour County Society.

Lehigh: *Reinstated Member*—Fred G. Klotz, 126 N. Ninth St., Allentown.

Montgomery: *Transfer*—Margaret C. Sturgis of Ardmore, to Philadelphia County Society.

Monroe: *Resignation*—Robert R. Gerhart, Linden Hall (Center Co.).

Northampton: *New Member*—Jacob W. Kline, 43 N. Fourth St., Easton.

Northumberland: *New Member*—Joseph Fisher, 316 S. Third St., Sunbury. *Death*—David S. Hollenbeck of Shamokin (Jeff. Med. Coll., '82), March 15, aged 87. *Resignation*—Raymond C. Fagley, St. Louis.

Philadelphia: *New Members*—Everett S. Barr, Byberry; Thomas J. Walsh, 2225 Greene St.; Frank H. Krebs, 1914 E. Cumberland St.; Charles T. C. Nurse, 713 S. Sixteenth St. (transferred from Luzerne County Society); Temple S. Fay, University Hospital, Thirty-fourth and Spruce Sts.; Harry S. Fist, 1225 Spruce St.; William O. Kleinstuber, 2816 D St.; Max Harris, 1307 Girard Ave.; Ethel C. Russell, 3600 Walnut St.; A. C. Menger, 1502 N. Twenty-ninth St.; Frederick S. Schofield, 4402 Walnut St.; David Budin, 3125 Diamond St.; David M. Sidlack, 927 Spruce St.; Carroll S. Wright, 1922 Spruce St.; Florence E. Ahlfeldt, 2011 E. Allegheny Ave.; Eugene M. Hughes, Philadelphia Hospital Byberry; Harry M. Metzger, 1503 N. Franklin St., Philadelphia. *Reinstated Members*—William F. Morrisson, 2044 Chestnut St., Philadelphia. *Deaths*—Augustus Koenig of Philadelphia (Univ. of Penna., '94), recently, aged 53; Samuel W. Latta of Philadelphia (Univ. of Penna., '68) March 13, aged 75. *Resignations*—A. Du Pont Smith, Morris B. Miller, John Ricciardi, Philadelphia; and Matthew Czuback, Wheeling, W. Va.

Somerset: *Death*—Charles P. Large of Meyersdale (Univ. of Penna., '00), recently, aged 45.

Schuylkill: *New Members*—John J. Conway, Gilberton; Walter A. Lushinsky, Shenandoah; Lewis E. Davis, Centralia; P. Ray Meikrantz, Shenandoah. *Reinstated Member*—John S. Monahan, Shenandoah.

Susquehanna: *Transfer*—Robert B. Mackey, Montrose, from Lackawanna County Society.

Tioga: *Reinstated Member*—Harry A. Vosburg, Arnot.

Warren: *New Member*—Howard K. Petrey, State Hospital, Warren.

Washington: *Reinstated Member*—R. G. Furlong, Donora. *Transfer*—Walter R. Livingston, Polk, to Venango County Society.

York: *Reinstated Member*—Benjamin F. Posey, York.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since March 17th. Figures in first column indicate county society numbers; second column, State Society numbers.

Mar. 19	Perry	8	4535	$5.00
Mar. 20	Montgomery	135–142	4536–4543	40.00
	Somerset	29–33	4544–4548	25.00
	Franklin	35–39	4549–4553	25.00
	Mifflin	22	4554	5.00
	Erie	79–104	4555–4580	130.00
	Northampton	66–100	4581–4615	175.00
Mar. 21	Huntingdon	1–30	4616–4645	150.00
	Blair	58–77	4646–4665	100.00
	Bradford	23–39	4666–4682	85.00
	Dauphin	126–135	4683–4692	50.00
	Butler	30–37	4693–4700	40.00
	Venango	21–24	4701–4704	20.00
	Perry	9	4705	5.00
	Delaware	71	4706	5.00
Mar. 22	Lebanon	35–37	4707–4709	15.00
	Beaver	49–51	4710–4712	15.00
	Venango	25–32	4713–4720	40.00
	Perry	10–11	4721–4722	10.00
Mar. 26	Perry	12	4723	5.00
	Columbia	27–31	4724–4728	25.00
	Venango	33–43	4729–4739	55.00
	Delaware	72–74	4740–4742	15.00
	Somerset	34–40	4743–4749	35.00
	Greene	27	4750	5.00
	Clarion	28–31	4751–4754	20.00
	Beaver	52–56	4755–4759	25.00
	Armstrong	41–48	4760–4767	40.00
	Dauphin	136–138	4768–4770	15.00
	Lackawanna	139–159	4771–4791	105.00

	Bradford	40–41	4792–4793	10.00
	Juniata	8–9	4794–4795	10.00
	Cumberland	27–30	4796–4799	20.00
	Bedford	4–6	4800–4802	15.00
	Jefferson	2, 35–40	4803–4809	35.00
	Franklin	40–48	4810–4818	45.00
	Center	19–21	4819–4821	15.00
	Carbon	28	4822	5.00
	Cambria	106–117	4823–4834	60.00
	Westmoreland	101–109	4835–4843	45.00
	Mercer	65	4844	5.00
	York	1–94	4845–4938	470.00
Mar. 28	Westmoreland	110–115 123–124	4939–4946	40.00
	Indiana	1–58	4947–5004	290.00
	Somerset	41–42	5005–5006	10.00
	Mifflin	23	5007	5.00
	Cumberland	31	5008	5.00
	Snyder	6–8	5009–5011	15.00
	Westmoreland	116–122	5012–5018	35.00
	Mercer	66–67	5019–5020	10.00
	Butler	38–42	5021–5025	25.00
	Franklin	49–51	5026–5028	15.00
	Delaware	75–76	5029–5030	10.00
	Washington	103–110	5031–5038	40.00
	Lycoming	63, 102–107	5039–5045	35.00
	Bucks	61–66	5046–5051	30.00
	Fayette	82–88	5052–5058	35.00
	Bedford	7–12	5059–5064	30.00
	Cambria	122	5065	5.00
	Schuylkill	101–119	5066–5084	95.00
	Chester	35–57	5085–5107	115.00
	Lancaster	33–96	5108–5171	320.00
	Lehigh	49–83	5172–5206	175.00
	Berks	100–134	5207–5241	175.00
	Westmoreland	125–128	5242–5245	20.00
	Montgomery	143–150	5246–5253	40.00
	Lackawanna	160, 170–182	5254–5267	70.00
	Perry	13	5268	5.00
	Dauphin	145–148	5269–5272	20.00
Mar. 29	Tioga	1–20	5273–5292	100.00
	Dauphin	139–144	5293–5298	30.00
	Clinton	23	5299	5.00
	Lancaster	97–100	5300–5303	20.00
	Cambria	123	5304	5.00
	Center	22	5305	5.00
	Susquehanna	11–17	5306–5312	35.00
	Monroe	2–14	5313–5325	65.00
	Perry	14	5326	5.00
	Cambria	124–126	5327–5329	15.00
Mar. 30	Allegheny	703–1168	5330–5795	2,330.00
	Clearfield	60–64	5796–5800	25.00
	Indiana	59–63	5801–5806	30.00
	Westmoreland	129–133	5807–5811	25.00
	Venango	44	5812	5.00
	Beaver	57–58	5813–5814	10.00
	Dauphin	149–150	5815–5816	10.00
	Cambria	118–121	5817–5820	20.00
	Columbia	32	5821	5.00
	Lebanon	38	5822	5.00
	Wayne	17–19	5823–5825	15.00
	Cumberland	32–33	5826–5827	10.00
	Tioga	21	5828	5.00
	Union	14–15	5829–5830	10.00
	Delaware	77–80	5831–5834	20.00
Mar. 31	Jefferson	41–49	5835–5843	45.00
	Lawrence	33–38	5844–5849	30.00
	Washington	111	5850	5.00
	Huntingdon	31–32	5851–5852	10.00
	Butler	45–50	5853–5858	30.00
	Delaware	81–84	5859–5862	20.00
	Cambria	127	5863	5.00
	Mifflin	24	5864	5.00
	Dauphin	151	5865	5.00
	Mercer	68	5866	5.00
	Schuylkill	120–121	5867–5868	10.00
	Butler	43–44, 51	5869–5871	15.00
	Montgomery	151	5872	5.00
	Fayette	89–90	5873–5874	10.00
	Juniata	10	5875	5.00
	McKean	25–36	5876–5887	60.00
	York	95–108	5888–5901	70.00
	Erie	105–113	5902–5910	45.00
	Warren	37–49	5911–5923	65.00
	Crawford	28–50	5924–5946	115.00
	York	109	5947	5.00
	Lycoming	108–112	5948–5952	25.00
	Westmoreland	134–136 138–139	5953–5957	25.00
	Center	23–24	5958–5959	10.00
	Tioga	22	5960	5.00
	Butler	52	5961	5.00
	Jefferson	50–51	5962–5963	10.00
	Blair	78-84	5964–5970	35.00
	Bedford	13–16	5971–5974	20.00
	Cambria	128	5975	5.00
	Juniata	11	5976	5.00
	Northampton	101-119	5977–5995	95.00
	Clearfield	65	5996	5.00
	Northampton	120	5997	5.00
(1922)	Bedford	16	7325	5.00
April 3	Bucks	67–73	5998–6004	35.00
	Cambria	129–130	6005–6006	10.00
	Northampton	121–122	6007–6008	10.00
	Somerset	43–44	6009–6010	10.00
	York	110–113	6011–6014	20.00
	Union	16	6015	5.00
	Luzerne	112–209	6016–6113	490.00
	Philadelphia	1251–1500	6114–6363	1250.00
	Northumberland	46–54	6364–6372	45.00
	Bradford	42–44	6373–6375	15.00
	Washington	112	6376	5.00
April 4	Chester	58–60	6377–6379	15.00
	Huntingdon	33	6380	5.00
	Venango	45	6381	5.00
	Northampton	123	6382	5.00
	Mercer	69	6383	5.00
	Armstrong	49–52	6384–6387	20.00
	Westmoreland	140	6388	5.00
	Mifflin	25	6389	5.00
	York	114	6390	5.00
	Tioga	23–24	6391–6392	10.00
April 5	Westmoreland	141	6393	5.00
	Luzerne	210–213	6394–6397	20.00
	Lehigh	84–104	6398–6418	105.00
	Clinton	24	6419	5.00
	Cambria	131	6420	5.00
	Erie	114–125	6421–6432	60.00
April 6	Bucks	74	6433	5.00
	Luzerne	214	6434	5.00
	Northampton	124	6435	5.00
	Lancaster	101–106	6436–6441	30 00
	Columbia	33–34	6442–6443	10.00
	Tioga	25	6444	5.00
	Potter	11–12	6445–6446	10.00
	McKean	38	6447	5.00
	Lackawanna	183–196	6448–6461	70.00
April 7	Venago	46–47	6462–6463	10.00
	Luzerne	215–218	6464–6467	20 00
	Northampton	125	6468	5.00
	Fayette	74–75, 91–100	6469–6480	60.00
	Lawrence	39	6481	5.00
	Westmoreland	142	6482	5.00
	Jefferson	52–53	6483–6484	10.00
	Greene	28	6485	5.00
	Beaver	59–60	6486–6487	10.00
	Fayette	101–102	6488–6489	10.00
	Armstrong	53	6490	5.00
	Cambria	132	6491	5.00
	Westmoreland	143–144	6492–6493	10.00
	Cambria	133	6494	5.00
April 11	Washington	113	6495	5.00
	Northampton	126	6496	5.00
	Cambria	134	6497	5.00
	Berks	135–136	6498–6499	10.00
	Lawrence	40–41	6500–6501	10.00
	Potter	13	6502	5.00
	Westmoreland	145	6503	5 00
	Fayette	103–109	6504–6510	35.00

	Columbia	35	6511	5.00
April 12	Lackawanna	197–211	6512–6526	75.00
	Lawrence	42	6527	5.00
	Luzerne	219	6528	5.00
	Allegheny	1169–1203	6529–6563	175.00
April 13	Venango	48–49	6564–6565	10.00
	Northampton	127	6566	5.00
	Potter	14	6567	5.00
	Delaware	85	6568	5.00
	Washington	114–118	6569–6573	25.00
(1922)	Washington	125	7326	5.00
	Philadelphia	1501–1777	6574–6850	1385.00
(1921)	Philadelphia	2060	7348	5.00
(1922)	Philadelphia	2021	7327	5.00
	Erie	126–130	6851–6855	25.00
	Tioga	26	6856	5.00
April 14	Bucks	75	6857	5.00
	Columbia	36–39	6858–6861	20.00
	Armstrong	54	6862	5.00
	Delaware	86	6863	5.00
	Westmoreland	146	6864	5.00
	Lackawanna	212–217	6865–6870	30.00
April 16	Dauphin	152	6871	5.00
	Venango	50	6872	5.00
	Luzerne	220–222	6873–6875	15.00
	Lawrence	43–50	6876–6883	40.00
	Somerset	45–46	6884–6885	10.00
	Chester	61–68	6886–6893	40.00
April 17	Huntingdon	34–35	6894–6895	10.00
	Fayette	110–114	6896–6900	25.00
	Philadelphia	1778–1825	6901–6948	240.00
April 18	Dauphin	153	6949	5.00
	Blair	85	6950	5.00
	Potter	15	6951	5.00
	Westmoreland	147	6952	5.00
April 19	Chester	69	6953	5.00
	Cambria	135	6954	5.00
	York	115–116	6955–6956	10.00

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary
230 State St., Harrisburg, Pa.

LEGISLATION

The customary rule is adhered to in the present session of the Legislature in that when a bill referring to the duties or privileges of the medical profession is introduced, some one promptly objects.

It was with some confidence that the amendments to the Workmen's Compensation Act in House Bill No. 846 were introduced in the Legislature because of the conditions and no apparent opposition. However, at the last moment prior to final passage in the House a demand was made on the part of certain people of the state for a hearing, which was held on Tuesday, May 1st. At this writing we cannot advise our readers as to the present status of the bill, but would urge prompt action on the part of those interested in industrial surgery by wiring the representatives and senators requesting the passage of the amendments to the Workmen's Compensation bill as they appeared in the original draft in the House of Representatives.

During the week of April 23d the members of the profession received Bulletin No. 2 issued by the Medical Legislative Conference. This pamphlet describes in brief the location and status of most of the bills of interest to the profession.

Senate Bill No. 242

(Known as the bill to provide for a State Board of Osteopathic Examiners and to examine and regulate osteopathic surgeons.)

This bill at the time of writing this report has been reported out in the Senate and referred back to the Committee for printing. We have received copies of this amended bill and find that the following changes have been made:

It provides that candidates for a license to practice osteopathy in the State of Pennsylvania must present to the Board of Osteopathic Examiners one of the following credentials: "A diploma of graduation from a reputable college or university granting the degree of bachelor of arts or science or equivalent degree or a diploma of graduation from an educational institution maintaining a four years' course of study equivalent to a standard four-year high school course that is a State Normal School or a high school a seminary an academy or a college preparatory school or a certificate of having passed examination for admission to the freshman class of a reputable literary or scientific college or university or a certificate of having passed an equivalent examination conducted by the Bureau of Professional Education * * * That the preliminary education shall include one year's credits in physics, chemistry and biology as approved by the Bureau of Professional Education."

After the first day of July, 1928, all applicants for license before the State Board of Examiners must furnish the aforesaid proof with the exception of the privilege of coming before the Bureau of Professional Education for examination for a preliminary certificate.

Section 11 of this amended act says: "Every license to practice as an osteopathic physician issued by the State Board of Osteopathic Examiners shall authorize the holder thereof to practice osteopathy in all its branches including minor surgery and obstetrics without restriction as the same is herein defined and taught and practiced in the legally incorporated reputable colleges of osteopathy but it shall not authorize the holder thereof to practice operative surgery without obtaining an additional license to practice such surgery as provided in section 11 (b) of this act."

Section 11 (b) states "Any person licensed to practice osteopathy in this State and desiring to enter upon the practice of operative surgery as taught and practiced in the legally incorporated reputable colleges of osteopathy may deliver to the Director of the Pre-Professional and Professional Credentials Bureau of the Department of Public Instruction upon the payment of a fee of twenty-five dollars a written application for license together with satisfactory proof in such form as may be required by the Osteopathic Surgeons' Examining Board that the applicant has served for a period of not less than two years as an interne or assistant surgeon in an approved osteopathic hospital which shall have at least ten beds per interne," etc.

Section 11 (a) states "For the purpose of licensing osteopathic physicians to practice operative surgery until other provisions are made by the General Assembly there is hereby created in the Department of Public Instruction a special examining board to be known as the Osteopathic Surgeons' Examining Board. Such board shall consist of the director of the Pre-Professional and Professional Credentials Bureau of the Department of Public Instruction who shall be a member ex-officio and four other members who shall be appointed by the Governor. Two of such members shall be appointed from four persons nominated by the Bureau of Medical Education and Licensure of the Department of Public Instruction who at the time of their appointment are licensed and qualified to practice medicine and surgery and have practiced the same in this Commonwealth for a period of not less than ten years immediately prior to their appointment and two from four persons nominated by the Board of Osteopathic Examiners who at the time of their appointment are licensed and qualified to practice osteopathy and have practiced the same in this Commonwealth for a period of not less than ten years and who have practiced surgery for a period of not less than five years immediately prior to their appointment."

It also provides that "Any osteopathic physician who has been practicing operative surgery for a period of not less than ten years shall not be required to take the examinations required by this section and shall be eligible to appointment as a member of the Osteopathic Surgeons' Examining Board."

Section 12 provides that "certificates when made or issued by osteopathic physicians licensed under the laws of the Commonwealth shall be accepted by the persons partnerships corporations officers boards bureaus or departments to whom the same are made with the same force and effect as reports or certificates issued by physicians of other schools and such osteopathic physicians shall be entitled to the same fees and compensation as is provided by law for physicians of any other school."

The provisions of Section 12 would, therefore, permit the osteopathic physician to treat cases under the Workmen's Compensation Law as well as issue all other certificates or reports. This act if passed would give the osteopathic physician the same rights and privileges as have all of the medical profession with the exception of certifying to examination made of persons suffering from insanity.

In many ways Senate Bill 242, if it becomes a law, would materially change the preliminary premedical and postgraduate course of instruction of the osteopathic practitioner. It is sincerely hoped that all measures relative to the practice of the healing art may tend upward in requirements and that eventually all may come under the direction of a "one board" law.

On account of the lack of space it is not possible to discuss individually the merits or objections to the acts referred to in the Legislative Bulletin, but there is still an opportunity for many changes to be made in legislation in the House and Senate prior to adjournment.

This department of the Atlantic Medical Journal will be open for communications and requests for information by letter, and we would again urge the members to keep closely in touch with the section of the Journal relative to legislation affecting the medical profession.

APPLICATION OF SWIMMING POOL SANITATION TO THE PUBLIC BATHING BEACH

Willis P. Baker, Washington, D. C. (*Journal A. M. A.*, March 31, 1923), describes the manner in which a popular bathing beach is made safe for bathers so far as the spread of infections is concerned. This is accomplished by means of chlorination of the water. Several hundred thousand persons bathe at this beach each season, and no water-borne infections traceable to such bathing have occurred during the last two seasons. No objection to the chlorin in the water has been made by the bathers. If the concentration of free chlorin is kept below 0.5 part per million, its presence is not very detectable by the average bather. Life guards who have been in the water more or less every day for two seasons have shown no irritation of the skin or mucous membranes. Regulations at this beach exclude persons suffering from contagious diseases. While such a regulation seems desirable, its strict enforcement does not seem practicable when applied to the general public. The same may be said of the shower bath preliminary to entering the beach. The question of expectoration and cleansing of the nostrils while bathing seems more serious, and yet 90 per cent of all bathers do this frequently and quite unconsciously. It is thought that this chlorin treatment takes care of any ordinary soiling of the water by infected bathers along with the destruction of bacteria from the constant sewage pollution, and that its continuance represents a cheap insurance against water-borne epidemics.

COUNTY MEDICAL SOCIETIES

Adams—James P. Dalhey, M.D., Gettyshurg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Perry Clare Smith. M.D., Amhridge.
Bedford—N. A. Timmons, M.D.,Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.*
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seihert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenhaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chamhersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydson Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lehanon.
Lehigh—Victor J. Gangewere, M.D., Allentown.
Luzerne—H. Irvin Evans, M.D., Ashley, Pa.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—William R. Levering, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunhury.
Perry—Maurice I. Stein, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—F. Gurney Reese, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—H. D. Washhurn, M.D., Susquehanna.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gihson Smith, M.D., York.

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* Deceased.

MAY, 1923

COUNTY SOCIETY REPORTS

DAUPHIN—MARCH-APRIL

At joint meeting of the Dauphin County Medical Society and the Harrisburg Academy of Medicine Dr. Thomas S. Blair entertained a large and appreciative audience met together in honor of his long and useful residence in Harrisburg. Dr. Blair recently resigned as Chief of the Bureau of Drug Control of the State Health Department, and at the present writing has left with his wife to take up their residence in California. In his farewell address the doctor expressed his deep regard for the many friends and associates he had here, interspersing his talk with several amusing stories and anecdotes. He gave high praise to the new Commissioner of Health and his deputy, and at the same time expressed his disapproval of the reduced appropriation to the Department of Health as contained in the proposed budget. As he ably explained, the work of the Health Department had been thoughtfully and efficiently developed by experts through the preceding years, keeping pace with science and growing needs of the state, and hence it would be most untimely and dangerous to have the work suddenly curtailed, with the risk of being found helpless before a sudden epidemic or some other phase of the work that would require immediate attention.

The unification and coöperation of the medical profession throughout the country was enjoined upon the members as the only way of self-protection and of serving as a positive force in the affairs of the nation.

Several of the members of the society gave voice to the valuable service Dr. Blair has rendered not only to the community but to the state.

Dr. Blair's absence will be keenly felt.

The April meeting of the Dauphin County Medical Society was devoted to a discussion of the various bills before the legislature of interest to the medical profession. Dr. Frederick L. Van Sickle, Executive Secretary of the Medical Society of the State of Pennsylvania, was the speaker, and being thoroughly familiar with legislative proceedings, discussed each bill separately in a most illuminating and comprehensive manner, explaining the pros and cons of each proposition, how far the bills had progressed, and their probable fate. Of chief import and interest was the Osteopathic Bill, number 242, and the bill amending the present Compensation Law as it affects the medical profession. The Osteopathic Bill at this time was in the hands of the Committee on Public Health and Sanitation, and a public hearing had been held on the same afternoon, when five prominent representatives of the medical profession from Philadelphia and Pittsburgh submitted their objections to the bill, while the osteopaths plead their cause. It was somewhat disappointing to note that while the regulars were effective speakers on the general question of regular medicine versus osteopathy they were obviously not as familiar with the particulars of the proposed bill or with the former bills governing the practice of the osteopaths as they should have been, and hence were not sufficiently prepared to meet and rebut the arguments of the osteopaths which came later.

Dr. Van Sickle read the proposed amendment to the Compensation Law, which apparently will render it immune to any further misinterpretation.

A short general discussion by the members and further elucidation by Dr. Van Sickle concluded the meeting. W. M. KUNKEL, M.D., Reporter.

ERIE—APRIL

The Erie County Medical Society held its regular monthly meeting April 3d. Dr. Wm. E. Lower of Cleveland addressed the meeting on "Factors Which Influence the Results of Surgical Operations." He said in part: With few exceptions, the technique of operations for pathological conditions which ordinarily present themselves to the surgeon has practically become standardized. Once surgical treatment is decided upon in a given case, we are prone to forget that the individual patient still presents problems which cannot be met by operation alone. In other words surgical treatment involves far more than the period occupied by the operation itself. The results of surgical treatment should include a consideration of the factors which enter into the preoperative and postoperative periods. To consider the mortality rate of operations without considering the condition of each patient when operation was performed and what may or may not have been done to bring the patient into the best possible condition for the operation or to restore him after it, does not give a fair basis for decision.

We know that practically any surgical procedure upon almost any organ or tissue of the body is now anatomically possible. Many organs of the body can be removed and life will continue in their absence. Mortality rate pertains largely to the management of each case by the surgeon, the nurse, the interne, and all those to whom any portion of the care of the patient before or after operation has been confided. The age-old concept, that when one of the members of the body suffers all the other members suffer also, acquires new emphasis, and its reverse is equally important, namely, that whatever contributes to the welfare of the organism as a whole will contribute also to the welfare of that portion of the organism in which the pathological condition exists. It becomes essential, therefore, to study the effect upon the organism as a whole of each of the factors which enter into the period of hospital care: the surroundings of the patient from his entrance into the hospital to the moment of the operation; the anesthetic; the environmental factors during the postoperative period. Multiplicity of appliances for diagnosis and treatment are valuable, often essential adjuvants, but of themselves alone are of no avail. The war demonstrated what could be accomplished with a minimum of appliances by the skill of surgeons and nurses. To certain patients coming from limited environments the very term "hospital routine" may be a definite barrier to the best progress. A wise nurse who sees each patient as an individual can accomplish wonders with such patients. For the best results the surgeon, interne and nurse should interpret hospital rules in terms of the need of the individual patient. The hospital period is only one factor; every phase of the patient's life and habits will influence his progress. The power of the patient's physician and of the surgeon upon his first contact with the patient to inspire faith and confidence in the result is an important factor. Christian Scientists and "Couéists" have only one truly valuable conception upon which their teachings are based, of which we can and should avail ourselves. I do not mean that we should ever *promise,* as do many chiropractors, osteopaths and followers of other cults, that certain cure is to result from the procedures we recommend; but we should inspire in our patients confidence that submission to the procedures and adherence to the regimen which we advise is their best hope.

Correctness of diagnosis, only, justifies surgical procedure. It is not enough to know how to do certain operations, but also when to do, and just as important when not to do. We no longer depend on clinical signs and physical examination alone. We have the stethoscope, bronchoscope, cystoscope, chemistry of the blood, urine and other body fluids and tissues. The application of the x-ray to all fields of medicine and surgery is being constantly extended. The surgeon should avail himself of every method for establishing with the utmost possible certainty the differential diagnosis.

The slightly wounded, should receive as painstaking attention as the more seriously injured. We have no way of comparing the result in civilian life, of the neglect of apparently trivial injuries with the same condition during war, but the economic loss to the community is undoubtedly very great. In addition every surgeon can recall many occasions on which he has been called to deal with untoward results following operative procedure in the hands of inexpert operators. The catastrophes which may follow very serious imperative operations are often unavoidable and excusable, but the loss in time and life as a result of inexpert performance of minor operations under untrained anesthetists is not excusable.

Researches over many years have shown that every activation of the organism is at the expense of cells of the central nervous system and of the liver. This is also true of the activations of every-day life. The usual period of rest and sleep restores these cells after the usual daily activities. Any extraordinary activities, however, may drain the cells to such a degree that complete restoration cannot be affected by the normal period of sleep. Activations due to disease processes, therefore, going on over weeks and months in addition to the normal drain of daily life may reduce the cells of these essential organs to such a degree that special measures for their restoration must be taken if they are successfully to withstand the extraordinary activities attendant upon the psychic strain produced by the operation itself. Psychic stress is more immediately exhausting than any other kind of activation. Therefore the prime requirement of a patient entering a hospital for operation is to be mentally reassured; to be in an atmosphere of peace and hopefulness; to substitute confidence in place of fear.

Experimental studies have shown that a condition of intracellular acidosis is present in exhaustion from any cause. The correction of intracellular acidosis demands that the cells be supplied with abundant water. As the acids accumulate in the cells their respiration is interfered with and respiration is as essential for each individual cell in the body as it is for the organism as a whole. Oxygen is supplied to the cells primarily by the blood cells; the protection of the internal respiration of the cells and the combating of an intracellular acidosis, therefore, demand an abundant supply of whole blood. An abundant supply of water must be assured. In some cases 2,000 to 4,000 c.c. every twenty-four hours by hypodermoclysis is the quickest way of getting in the water. As a routine measure the blood of every surgical patient should be grouped before operation, that there may be no delay if the need for transfusion develops. It may be, however, that even with enough fluid the mechanism of circulation itself is not equal to its task. Static blood in the vessels is of no account; the myocardium must be reinforced. This may be accomplished by the preoperative administration of tincture of digitalis. Nervousness must be relieved and sleep and rest promoted. Bromides may be given or morphin if acidosis is not present or impending. Morphin prevents acidosis, but if acidosis is present morphin prevents its neutralization. Violent catharsis should be avoided; the withdrawal of fluids and consequent fatigue is prejudicial, more particularly so in old people. A gentle enema is all that is required. In regard to anesthetics, intracellular acidosis is increased under ether and by its lipoid solvent action the cell membranes are broken down.

The diminishing power of oxidation in the cells of the central nervous system is shown by a progressively decreasing temperature. Nitrous oxid does not have these disadvantages and so is to be preferred as the inhalation anesthetic. Researches have shown that even in the unconscious patient the traumatic stimuli reach and affect the cells of the central nervous system, a local anesthetic should be used to avoid this source of increased exhaustion.

In some cases the multiple stage operation is to be advised, the interval between operations being determined by the degree of physical stability established. The postoperative period also should be strictly individualized and does not terminate with the patient's departure from the hospital. No patient should be considered surgically a good risk unless every protective measure has been applied in his environment and within his own tissues. The final note on the patient's hospital record "discharged well," in view of the brief postoperative period, can only mean that the anatomic repair of the lesion has been accomplished and does not interpret the patient's economic status which, after all, should be the final criterion. If the child cannot enter school, if the mother cannot take up the cares of her household and family, if the man cannot enter upon the duties of his trade or profession, then we should not consider that our treatment is at an end until we have used every means to restore the economic condition of the patient.

Anna M. Schrade, M.D., Reporter.

LUZERNE—MARCH-APRIL

The regular meeting of the Luzerne County Medical Society was held in the Medical Society Building on March 7th, 1923, at 8:30 p.m. The meeting was called to order by President N. L. Schappert.

It was unanimously decided to give a testimonial dinner in honor of Dr. Charles Miner, who was appointed by Governor Pinchot as State Commissioner of Health.

Dr. L. L. Rogers, Jr., gave an exceptionally good illustrated lecture on "Infection of the Accessory Sinuses," which created considerable comment.

The second regular meeting of the Society was held on March 21st. Dr. R. R. Janjigian, pathologist of the Wilkes-Barre City Hospital, read a very interesting paper on "Urging Postmortems," making an appeal to physicians to try to obtain more postmortems in an effort to further the cause of medicine. Dr. Janjigian stated that the great medical discoveries of the past have been made through the comparison of the clinical examination of patients before death and a postmortem after death. The paper was discussed by several of the physicians.

The meeting of April 4th was held in the Medical Building and was called to order by President Schappert at 8:40 p.m.

Dr. Albertson, District Councilor, Scranton, discussed several of the bills which are coming before the Legislature in the near future.

Dr. H. B. Gibby spoke on Diphtheria Week and announced that in this district the week of April 23d to 28th would be designated as "Diphtheria Week," and spoke about the plans for getting this subject before the public.

Dr. L. C. Mundy read a very interesting paper on the "Susceptibility to Pneumonia of Patients Operated Upon With Lesions in the Upper Abdominal Region." This paper was discussed by Drs. A. Trapold, S. P. Mengel, L. A. Sheridan, Charles Long and J. E. Scheifly. The discussion was closed by Dr. Mundy.

H. Irvin Evans, M.D., Reporter.

PHILADELPHIA

March 14th

SUBJECT: SYMPOSIUM ON DIPHTHERIA

David Reisman, M.D., president, in the chair.

Dr. James G. Cumming: "Diphtheria as a Public Health Problem."—The problem is to reduce the three hundred thirty-three deaths and three thousand cases of diphtheria in Philadelphia yearly. The 1920 report of the Bureau of Health states that in 1880 the mortality from diphtheria was 53%, while in 1897, the first year that diphtheritic antitoxin was dispensed by the Board of Health, the mortality was reduced to 27%, and there has been a steady decrease in the number of yearly deaths since.

Dr. Cumming demonstrated with charts the fact that there are comparatively few deaths during the first year of life, that it is in the second year that the greatest number occur. After that the incidence declines, so that there are scarcely any after twelve years. A larger proportion of cases could be saved if infants were immunized in the first year instead of waiting until they are of school age. The high mortality rates are due partly to the failure of parents and physicians to recognize, report, and treat diphtheria cases. The Bureau of Public Health can immunize only twelve of the thirty-two thousand children born yearly, so that it is necessary for the practitioner to assist in this work.

Dr. E. L. Bauer: "The Use of the Schick Test in Stamping Out Diphtheria."—The use of toxin-antitoxin has given an added impetus to the subject of diphtheria prevention. As children grow to adult life, they become actively immunized to diphtheria, the process being slower in some than in others, and influenced by exposure. The same immunization can be accomplished in six months by the use of toxin-antitoxin, and will be permanent. Records show that only one individual is immunized for every case. An exposed individual should be offered passive immunity. It takes from three to six months to develop active immunity with three weekly injections of one c.c. each. Parke has reduced the danger from anaphylaxis by eliminating foreign proteins without changing the immunizing qualities of the serum. The Schick test is used to detect immunity, and it has been learned that country people are as a rule more susceptible than those living in cities. The test is not applicable for those exposed to diphtheria, since seventy-two hours must elapse before the results are known. The present methods do not deal with carriers, and until active immunization is used universally, that problem will have to be reckoned with. The application of methods is primarily a public health matter, with the assistance of physicians, and the good will and aid of the public. Diphtheria is a disease that can be eliminated by prophylaxis.

Discussion: In regard to compulsory measures for the use of toxin-antitoxin, it is not too great a burden for children to bear. The danger in the use of the serum is almost nil now. The carrier problem must be emphasized.

Dr. Bauer: The Schick test should be used to follow up the toxin-antitoxin to check up immunity, and those still susceptible should be immunized. This should supplement other methods of protection against diphtheria.

Dr. S. S. Woody: "The Treatment of Diphtheria."—The specific treatment for diphtheria is the giving of antitoxin early and in sufficient doses; therefore early diagnosis is of great importance. The most prompt action can be obtained by intravenous injection, but the danger from too sudden an introduction of foreign proteins into the circulation must be borne in mind. This method should be used in selected cases only, and anti-anaphylactic treatment can be given before the antitoxin. The amount of antitoxin to be given can be gauged only by the general condition of the patient, the extent of the local lesion, and the length of time he has been ill. The dose is reduced one-half or one-third for infants. Diphtheria antitoxin is fatal in cases of status lymphaticus and in asthmatics, but usually there is no contra-indication to its use. If in doubt, a sensitizing test may be done by rubbing a little of the serum into a scarification of the skin.

After giving the antitoxin, complete and prolonged rest is essential, and careful attention to diet, the bowels and the kidneys must be given. The heart should be closely watched for danger signals. The general action of antitoxin is to neutralize the toxins and prevent the development of systemic manifestations, and locally to lessen edema and remove the membrane.

The greatest danger in laryngeal types is from exhaustion or asphyxia, when time is too short to get relief from antitoxin. Fresh air, steam, turpentine stupes may help, and when the patient loses strength, intubation or tracheotomy is necessary.

Heart complications should be prevented by complete rest. Paralyses must be treated symptomatically. In treating carriers, tonsils and adenoids should be removed. Early diagnosis of diphtheria is very important.

General Discussion: Physicians should not delay giving antitoxin, waiting for a positive culture, as it will do no harm if the culture is negative.

Dr. Woody: The intramuscular dosage is ten to fifty thousand units, while the intravenous dose is usually fifteen to twenty thousand, supplemented with intramuscular injections.

Dr. W. D. Stroud: "The Importance of Follow-up Work in Connection with Diphtheria."—Dr. Stroud, giving credit to Drs. Mitchell and Woody, whom he had consulted, said that accurate statistics concerning the sequelæ of diphtheria were difficult to obtain, but it is generally understood that in six months all sequelæ have disappeared. If a heart case gives a history of having had diphtheria, need it be a foregone conclusion that the heart was damaged by that infection? It may be a factor in the chronic heart disease of later life. When a patient is discharged from the Philadelphia Hospital for Contagious Diseases, he is given a physical examination, and the parents are notified of any defects found. The health centers are informed, and they follow up the case.

Discussion: In diphtheria, one must be on the lookout for cardiac and nervous system involvement, and prophylactic measures are important.

Dr. C. Y. White: "The Municipal Laboratory as an Aid in the Control of Diphtheria."—Definite outfits for the taking of cultures can be obtained at Police Stations, and will be sent to the City Hall if taken before nine p. m. The City Hall office is open twenty-four hours. Care should be taken not to use media that are too old. The first culture in a case is positive only in seventy per cent, so that a physician should not regard a negative culture as diagnostic. Anaphylactic reactions are very rare, and do not seem to occur in diphtheria cases. Removing tonsils and adenoids is recommended in the case of carriers.

Discussion by Dr. Kolmer: The culture method is an aid in diagnosis, and the laboratory will help prevent diphtheria. Doctors need not fear to culture, for the guinea pig test is absolutely reliable. They are cautioned to culture deeply, because of the danger of the first negative culture.

Dr. Cairns: The Schick test should be standardized as to technique so that any physician can take hold of it.

Dr. Kahn: In Philadelphia, physicians can be confident that Dr. White's "positive" report from the City Laboratory means a virulent organism, one that will kill a guinea pig.

Dr. White: All primary positives on Monday and Thursday are automatically pigged, to determine the virulence. Twelve years ago there were about thirty types, while now they have been reduced to nine. Less than ten per cent of the cultures coming in are positive.

March 28th

SUBJECT: SYMPOSIUM ON "EXPERT TESTIMONY"

Dr. David Reisman, president, in the chair.

In his opening remarks, Dr. Riesman said the meeting had been called so that some concrete, practical good might come from the discussion.

Dr. Charles W. Burr: "The Physician as Witness."—An ordinary witness often acts as an expert by giving his opinions as well as relating mere facts. The courts have a poor opinion of the medical expert, and will accept almost any physician. It has been suggested that the expert be appointed by the judge, but it seems unwise to assume that the average judge is competent to choose, and would be unaffected by personal friendship and politics. It would be still more complex if the expert were to be appointed by the court. Often a physician is called because he is the attendant of the person on trial, and is used as an expert by the side that called him.

One type of expert sad to meet is the man with no standing in the profession giving opinions as an expert in all branches of medical work. The influence of the subconscious mind or bias is a great obstacle in nearly every case with any personal interest. The man who delivers a clinical lecture on the stand has no great weight with the jury. The dangerous witness is the one well trained, with a twisted moral sense, who is out for the highest fee. Others disregard the legal meaning of the word "insanity."

It has been proposed to prohibit the use of the hypothetical question, with the idea that it would be better to ask the jury to decide, allowing the medical man to weigh all evidence. The ideal witness has no personal interest, quietly states his opinions with the reasons for them, and learns the evidence of the other side before taking the position as witness.

The difference in the legal and medical definitions of insanity often causes trouble. A physician can determine delusion and dementia, but cannot decide whether or not a patient is more liable than others to undue influence. A new kind of expert is being used now to determine the responsibility of the patient—the "clinical psychologist" and the Binet-Simon tests. In juvenile courts, medical questions are left to medical men. The wise witness never loses his temper, gives opinions based on reason, not on feeling, and is sure of himself.

Owen J. Roberts, Esq.: "Diagnosis and Possible Remedies."—In any system of jurisprudence, the jury attempts to find facts, which the court applies. "Mere facts" are the raw material of eye witnesses. The jury reasons from mere facts to conclusions or true facts. The ordinary jury has no scientific experience or knowledge, and expert testimony is necessary in order that the proper conclusions may be drawn. This procedure has certain limitations, such as the fact that deductions and not primary facts are given the jury, which cannot follow the reasoning processes, and that there are often contradictions. The only safeguards are cross-examination and the common sense of the jury.

It has been suggested that the expert be made impartial by withholding fees, or that he be chosen by the court and the fee paid by the court. No expert can help form conclusion as to which party is right. Shall experts be examined by council? The meeting of experts might become a star chamber proceeding, and would also be susceptible to abuses. The present system is the best, with cross-examination by each side. An additional element might be made possible by law, by allowing the judge to call in his own expert. Abuses might creep in here also, but most men are honest.

The Hon. T. F. Jenkins: "Expert Testimony."—The question of expert testimony is something obscure to the ordinary mind, and yet everyone in daily life is continually using expert witnesses. The expert must be competent in his line, must possess sound judgment, and above all, must be honest. The jury must determine what men can be relied upon. There is necessarily much conjecture in medical expert testimony, and there is divergence of opinion. The hypothetical question often leaves out facts, and a man ceases to be an expert witness if he agrees to answer "Yes" to such a question. Every medical man called upon to testify, should acquaint himself with the real facts. Preparing a question with counsel has led to the remark that medical experts show such bias that their testimony cannot be relied upon.

Discussion by Ralph B. Evans: At the present time, medical witnesses are not satisfactory to the medical and certainly not to the legal professions. The real remedy lies with the bar and the medical profession themselves. The universal expert on every branch of medicine is the man from whom we suffer most and want to drive out of business. There is already some improvement in that respect, but the average doctor does not appreciate what he can do. Accident cases are often tried eighteen months to two years after their occurrence, when the family physician has only a vague recollection of the facts. He often gets the history from the lawyer five minutes before going on the stand, and tells what the plaintiff tells him he did at the time. Physicians should keep accurate records, and bring them to court if necessary. Vice exists not so much in expert opinion, but in the false foundations on which it is based.

Dr. D. McCarthy: There would be no trouble if good members of the bar should choose good medical men. The bar considers one who testifies often a good expert, while doctors know that he can't be good if he has so much time to testify. Testimony ought to be as united as it is in a consultation. A safe way to get facts is by means of a commission composed of a doctor, a lawyer and a business man. There is no reason why the hypothetical question should be answered, or that the witness need not tell the whole truth. The fault lies in the fact that the lawyer will not bring out the other side. Most doctors want to tell the truth and will do so if asked the proper questions. The attorney in the case has a consulting expert at his side, a biased help to assist in asking questions. Opinions are most often not directly asked.

Mr. E. A. Abbot: There would not be so much criticism and contention if there were more honesty and knowledge of the subject on the part of lawyers and doctors. It is almost impossible for some doctors not to be partisan, especially in negligence cases. If every doctor would refuse to testify the way the lawyer wants him to, regardless of facts, matters would be helped. Lawyers must coöperate with doctors who want to do what is decent and legal. If the right kind of questions and facts are put to the honest doctor, you will get the right answers.

Dr. S. Leopold: "From the Psychologist's Viewpoint."—There is not much use for expert testimony among judges, juries and lawyers. Sometimes the procedure, not the witness, is valueless and defeats its own purpose. The method of trial is in the nature of a combat, with the battle going to the stronger. Partisanship is at the bottom of the feeling against the expert. There is a wide gap between the old concepts of law and the modern trends in medicine, especially psychology. We are considering dementia præcox, etc., rather than abstracts, and are coming to a more intensive study of the individual and his problems. This is shown through juvenile courts and psychiatric clinics, where studies are made to find the influences in a delinquent's life, his family conditions, bad habits and environment.

General Discussion: In Germany, expert testimony is appointed by the judge to insure impartiality. A judge should have the right to call in help, for how is he to know whether or not a verdict is excessive?

Part of the difficulty lies in the contingent fee, which works for dishonesty and misery. A doctor cannot tell all he knows and thinks, which is a matter of the law, and not the expert's business. He is not a liar, but the lawyer wants to make him one.

Mr. Jenkins: It is not only the right, but also the duty of every witness to qualify the statements he makes in answer to a lawyer's questions, if he feels he is not telling the whole truth.

No prosecutor wants to condemn a person mentally deficient. He does not know, and wants the best advice. It might be practical and most beneficial to have a standard board appointed to establish the mental responsibility and deficiency of every person brought to trial.

Dr. Mills: Honesty is of the utmost importance, and is not brought about by statutes but by raising the tone of both professions.

Anna Ruth Winter, Reporter.

PENNSYLVANIA NEWS ITEMS

DIPHTHERIA WEEK IN PENNSYLVANIA

It is the desire of the Committee on Public Relations of the Medical Society of the State of Pennsylvania to obtain the results of the Diphtheria Campaign during the month of April. For this purpose may we ask that the district chairmen, through their vice-chairmen and county society secretaries, furnish the Secretary of the Committee with a brief résumé of the work in each county? A compilation of these statistics will be of profit not only to the Committee but to those who have so kindly assisted in putting on the various programs. Address the Secretary, Committee on Public Relations, 230 State St., Harrisburg, Pa.

DEATHS

Dr. David B. Hand, of Scranton, who was graduated from New York University Medical College, New York, in 1870, died on April 1st, aged 75 years.

Dr. Eugene Stanley Hayes, of Wyoming, died on March 17th, aged 64 years. He was a graduate of Detroit Medical College, Detroit, Mich., class of 1881.

Dr. Homer B. Lathrop, of Springville, aged 67 years, died at his home on April 9th. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1878.

Dr. David S. Hollenback, of Shamokin, a Civil War veteran, aged 87 years, died on March 20th. He was graduated from Jefferson Medical College of Philadelphia in 1882.

Dr. Charles S. Lindsay, of Pittsburgh, who was born in 1856, and was graduated from the Western Reserve School of Medicine, Cleveland, Ohio, in 1879, died on April 10th of angina pectoris.

Dr. Thomas J. Jacobs, of Somerfield, died of pneumonia on March 9th. Dr. Jacobs was born in 1853 and was graduated from New York University Medical College, New York, in 1878.

Dr. Frank Kurtz Addy, of Pittsburgh, aged 48 years, died on February 21st at Santa Barbara, Calif., of influenza and diabetes mellitus. He was graduated from Western Pennsylvania Medical College, Pittsburgh, in 1903.

Dr. Theodore Fassitt, of Philadelphia, a Civil War veteran, died suddenly of heart disease on March 12th. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1869, and at the time of his death was 78 years old.

Dr. Ralph Ellis Leidy, of Boyertown, who served in the Medical Corps of the U. S. Army during the World War, died of pleuropneumonia on March 13th. Dr. Leidy was a graduate of Jefferson Medical College of Philadelphia, class of 1914, and at the time of his death was 36 years old.

Dr. I. C. Gable, of York, died on April 12th at the age of 74 years. Uremic poisoning was said to have been the cause of his death. Dr. Gable was graduated from the University of Pennsylvania School of Medicine in 1877. He was President of the Medical Society of the State of Pennsylvania in 1906 and served for eighteen years as a trustee. He was also county medical inspector for more than twelve years.

Dr. Miles L. Davis, of Lancaster, died on March 8th, following an attack of apoplexy. Dr. Davis was in his 79th year. He was graduated from the Bellevue Hospital Medical College, New York, in 1870, and was a veteran of the Civil War. He was Medical Director of St. Joseph's Hospital for 25 years and had the distinction of building the first crematorium in America, located in New York. His body was cremated at the Chelten Hills Crematorium, Philadelphia.

Dr. Samuel Whitehill Latta, of Philadelphia, aged 74 years, died on March 13th of heart disease. Dr. Latta was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1868. He was a member of the State Board of Medical Examiners, the American Public Health Association and a former president of the Pennsylvania Railroad Surgeons' Association, as well as chief medical examiner for the Pennsylvania Railroad, 1886-1918. During the Civil War he was assistant surgeon in the U. S. Navy.

Dr. Augustus Koenig, of Philadelphia, who was a former lecturer and instructor at the University of Pennsylvania, died on April 4th at the Jefferson Hospital following a physical breakdown. Dr. Koenig was born in 1870 and received his early education in Switzerland and Germany. In 1894 he was graduated from the University of Pennsylvania School of Medicine, Philadelphia. As a lecturer at the University his subjects were metallurgy, mammalian anatomy and normal histology. For the last five years he practiced medicine.

BIRTHS

Born to Dr. and Mrs. Stanley Barratt, of Wilcox, a daughter, Rachel Barratt, April 14, 1923.

Born to Dr. and Mrs. Harvey P. Feigley, of Quakertown, February 23d, a son, Donald Malcolm Feigley.

Dr. and Mrs. W. D. Gemmill, of Morganza, have announced the birth of a daughter, Eleanor Dempster Gemmill, April 8th, 1923.

ITEMS

Dr. James A. C. Clarkson, Secretary of the Mifflin County Medical Society, is in Europe.

Miss Elizabeth Cooke, daughter of Dr. and Mrs. Edwin S. Cooke, of Philadelphia, will become the bride of Horbert Morford early in June.

Dr. George E. de Schweinitz, of Philadelphia, President of the American Medical Association, sailed from New York on April 17th for Cherbourg and Southampton.

Dr. and Mrs. Edmund L. Smith, of Bedford, announce the engagement of their daughter, Miss Margaret MacVicker Smith, and William Foulke Satterthwait, of Landsdowne.

Dr. Withrow Morse, Professor of Physiological Chemistry in West Virginia University School of Medicine, has been elected to the position of professor of Physiological Chemistry and Toxicology in the Jefferson Medical College.

The engagement of Miss Mary Towle and Dr. Perry O. Hall, of Paxtang, Pa., has just been announced. Miss Towle is a graduate of Mt. Holyoke College. Dr. Hall is at present practising in Lilly, Pa.

The oldest practicing physician in Montgomery County, Dr. D. R. Beaver, of Conshohocken, celebrated his eighty-first birthday during the week of April 15th. His birthday was the occasion for the expression of good wishes from thousands of his townsmen and friends in the county.

Dr. David Marine, of the Montefiore Hospital, New York City, will deliver the Eighth Mellon Lecture entitled, "The Importance of Our Knowledge of Thyroid Physiology in the Control of Thyroid Diseases," before an open meeting of the Society for Biological

Research of the Medical School, University of Pittsburgh, on the evening of May 10, 1923.

A ROMANCE which began at the bedside of a patient they were both attending, culminated April 14th in the marriage of Dr. Fred W. Smith, of Philadelphia, and Miss Marie A. Rotzell, a nurse. Miss Rotzell was graduated from the Abington Hospital School for Nurses, and is the daughter of the late Dr. Willet E. Rotzell. Dr. Smith was graduated from Hahnemann Medical College in 1903.

DECISION of the board of corporators in regard to staff resignations and general upheaval caused at the Woman's Medical College of Philadelphia by their failure to retain Dr. Alice Weld Tallant, head of the department of obstetrics, will be announced soon, according to one of the members of the board. So far twenty-four resignations have been announced, including Dr. Clara Marshall, who was dean of the college for twenty-nine years, resigning this post in 1917. Dr. Marshall is the second emeritus professor to resign.

THE ANNUAL MEETING of the Allegheny County Medical Society was held on the evening of April 10th with Dr. Walter F. Donaldson, the President, presiding. Nearly 600 members were present. Following the election of officers and delegates a dinner was served at 7:45. The speakers of the evening were Dr. Charles H. Miner, Commissioner of Health; Mr. William A. Challener, Attorney; Dr. Howard C. Frontz, President-Elect of the State Society; and Dr. Lawrence Litchfield, President of the State Society. Following the business session the members were entertained with music and pictures of Yellowstone National Park.

THE PITTSBURGH COLLEGE OF PHYSICIANS held their annual dinner in connection with the Second Bedford Lecture, on April 26, 1923, at 6:30 p.m., at the Duquesne Club, Pittsburgh. The essayist for the evening was Dr. Sydney R. Miller, of Baltimore, Md., whose subject was "The Future of Our Profession." Although the College of Physicians is a Pittsburgh organization of physicians and surgeons, a great many out-of-town men reserved places for the lecture on account of the timeliness of the subject and the eminence of the essayist.

Dr. H. H. Turner, president of the organization, introduced the speaker. The dinner was under the direction of Drs. E. Bosworth McCready, Clement R. Jones and W. H. Robinson.

POLITICS AND PUBLIC HEALTH

The views of the New York State Department of Health as to the need of divorcing municipal health administration from partisan politics are expressed in the following editorial which recently appeared in *Health News*, the Department's official bulletin:

"The city of Savannah, Georgia, wants a new health officer. The position carries a salary of $4,800 a year. An automobile is furnished for official business. Like other city officers Savannah's Health Commissioner is entitled to retire on a pension after a certain term of service. All these inducements are to the point, and should play their part in attracting worthy candidates. But most notable of all, to our way of thinking, in Savannah's straightforward advertisement of its needs is the ringing declaration '*the City of Savannah guarantees the position of health officer free from political interference.*'

"Here is a heartening symptom of a notable advance in the interests of public health in America. When the spacious and lovable city of Savannah feels moved, perhaps even obliged, to put a guarantee of that kind into its call for a health officer, something has happened in this country and we are now at a point where recently we were not. The incident must be symptomatic. If this spirit exists in one of our cities it must exist in others. Perhaps it is not too much to hope that we are entering an era in which enlightened communities are already beginning to realize that the cost of political muddling in public health is paid not merely with the dollars of the taxpayers but with their lives.

"Let Savannah's light so shine before all the cities of our land that those which still permit politics to dominate their public health services may be led to pause and consider and change their ways. Aside from every question of abstract principle it is the stupidest and most short sighted kind of practical politics for a city administration to neglect the interests of public health and to make an ugly duckling of its health department. If some cities cannot yet see their way, like Savannah, to abolish every vestige of political interference in their health work let them at least consider the out and out practical advantages for any city administration which will aim at a high record of attainment under modern standards in everything which has to do with safeguarding the lives of their citizens and which contribute to the demonstrable reduction of death rates."

CASE OF ECTOPIC PREGNANCY AT TERM WITH LIVING CHILD

A diagnosis of pregnancy of about eight months with impending eclampsia having been made, an immediate cesarean operation was performed by B. J. O'Neill and W. W. Crawford, San Diego, California (*Journal A. M. A.*, March 31, 1923). The abdomen was opened by a right rectus incision, and a dark, bluish, smooth mass, resembling an ovarian cyst, was revealed. On palpation, fetal parts were felt, separated from the hands by a thin membrane, which ruptured almost at once, with a gush of water. The baby was lifted out in the usual way, the head offering considerable resistance. The cord was clamped, and the baby was revived by an assistant, with no more difficulty than is usual in a cesarean section. After removal of the child, there was a fair amount of hemorrhage, which was controlled by pressure with gauze. The uterus was somewhat enlarged. The left tube was about 6 inches (15 cm.) long, and the expanded fimbriated extremity was directly continuous with the cavity formed by the membranes. The placenta was thin and widespread, being planted on the posterior surface of the left broad ligament and on the sigmoid and the intervening pelvic wall, beside being adherent to both the large and the small intestine. The placenta thus formed the left and upper side of the sac. The left ovary was not identified. Actively bleeding vessels entered through adhesions from the large and small intestines, and some very large vessels entered the placenta from the broad ligament. The baby, a boy, weighed 6 pounds and 3 ounces (2,800 gm.), had hair and well developed nails, indicating birth at practically complete term. The skull was somewhat deformed from resting on the sacrum, and there was a moderate calcaneovalgus of the right foot, a marked talipes equinovarus of the left foot and a partial dislocation of the left hip, with indication of some bony pathologic process in the left knee. The postoperative course for both mother and child was uneventful. The authors conclude that the presence of a complete tube with the sac starting at the fimbriated end and the disappearance of the ovary would indicate that fecundation took place either in the fimbriated extremity of the tube or in the ovary itself.

THE

MEDICAL SOCIETY OF DELAWARE

EDITORIAL

OUR NATIONAL ORGANIZATION

That there seems to be a rather wide-spread dissatisfaction with some phases of the national medical organization, the American Medical Association, hardly the most ardent supporter of that organization will deny. Further, that there is perhaps some show of reason for this dissatisfaction will also hardly be denied. For many months past, in several places throughout the country, as it were, a "voice in the wilderness" has been raised in protest against our society, especially against the type of organization. We ourselves, while holding no brief for the protestants, and with absolutely no intention of pulling chestnuts from the fire for them, really feel that of the many complaints the following should receive the serious attention of the entire profession.

In the first place, the President has been reduced to a mere figurehead. His is a position of great honor, but due to the present organization, it can hardly be termed one of great trust or responsibility. He is *not* the head of the general work of the association; his work is chiefly ornamental and advisory.

In the second place, entirely too much power has been delegated by the House of Delegates to the Board of Trustees. This defect may not be a vital one so far as the practical workings of the association are concerned—we candidly do not believe that it is, and it may even be possible that the present arrangement is more efficient—but it certainly is not democratic and does not represent the opinion of the "man back home." Even the House of Delegates can sometimes fail to represent the man back home, as was evidenced only too plainly a couple of years ago when it pronounced that the American medical profession thought that there was no place for alcohol in their medical armamentarium, a view-point absolutely at variance with the facts as later determined. There is much more reason to doubt the ability of the Board of Trustees to represent the real feelings and aspirations of the profession than is the case with the House of Delegates. The only excuse for delegated authority of this kind is the possibility that the work may be done more quickly, more efficiently, and more economically by the smaller body than by the larger one. Yet we doubt it.

In the third place, the Board of Trustees in turn, has delegated entirely too much authority to the Editor and General Manager, placing in the hands of one man the workings of practically the entire concern. There must be leaders, of course, and of these leaders there must be a chief, but in the present instance it is alleged that this one chief dominates his Board instead of the Board dominating him. We are not in a position to express an opinion on this question, but it is one of such vital importance to every practitioner that the facts should be made known. If, as is alleged, this chieftaincy practically amounts to a dictatorship over men and money, the quicker we know it the better; and the quicker we act on it the better. We are firmly of the belief that the officials and Boards referred to are men of the highest integrity, and of more than average ability, yet if it be true that our organization has been pyramided to such a point that one man, however capable he may be, dominates inflexibly the entire organization, it is high time to change the organization. This would be no innovation; in fact changing the constitution of the American Medical Association has been its favorite pastime for these many seasons, a pastime that could be dispensed with without regrets. Let this next piece of tinkering be the last one for years to come.

With or without justice, the rank and file of our men as we come in contact with them seem to feel that the American Medical Association is an organization that exists solely for the sake of organization, and that it does not bestir itself very much in the interest of the ordinary doctor. This belief is founded chiefly on ignorance of many of the phases of the work done by the national society; yet, as an example, it is undeniably true that the organization has only recently established a Bureau of Legal Medicine and Legislation at Washington when it should have done so ages ago. The thing in our everyday world that means most to the average man in practice is his economic position, yet until the recent past the economic phases of practice were sadly neglected, while the scientific side has been perhaps overstressed by the Association. Indeed, some of the work that has been done on the economic side has been a positive menace to the profession; we have in mind a past president of the American Medical Association who togged himself up in an army uniform long after the Armistice, and appeared before the legislature of his state to urge the passage of a bill for compulsory health insurance, when the state society to which he belonged had passed resolutions scathingly denouncing the proposed legislation. True, this was the act of an individual, but it happened that this individual had been considered one of the elect, and as such had been honored with the presidency of our national society. Parenthetically, let us ask, why is it that so many of our "shining lights," once they secure fame and fortune, become medical socialists, forgetting the ladder by which they climbed, and proposing to socialize the profession? Why?

The leading antagonist of the American Medical Association's organization is undoubtedly Dr. Charles J. Whalen, of Chicago, who is the editor of the *Illinois Medical Journal*. Being in the same city with the headquarters of the American Medical Association, his statements about the organization will be taken by many as containing inside or close-range information. and such may be the case; yet the very fact that poor Chicago houses both camps may account for the pointed statements he makes. In the December, 1922, number of the *Illinois Medical Journal*, he has a lengthy article entitled "The American Medical Association Becomes an Autocracy," which is interesting reading to say the least. Beyond the comments we have made in our opening paragraphs, we do not care to take sides either with him or against him, but we do wish two things: (1) We would like to see the *Journal of the American Medical Association* reprint his article intact, so that our entire membership can read it; and (2) we would like the same *Journal* to comment critically on his article. To the neutral person Dr. Whalen's trenchant pen makes out a plausible case for a sweeping reorganization of the Association, but we should like to hear the other side before we come to any conclusions.

W. E. B.

LEGISLATIVE NOTES

FALSE ECONOMY

At a time when all other states in the Union are increasing their expenditures on antituberculosis work; at a time when even the impoverished countries of Europe, like France, Italy and Russia, spend their last pennies, as it were, in organizing clinics and establishing sanatoria to fight consumption; at such a time, Delaware, in a fit of economy, is cutting down an inadequate appropriation, making it still more inadequate.

Delaware to-day is among the very few states that suffer from an excessive death-rate from tuberculosis. These states are: California, with 157.5 deaths per 100,000 population; Colorado, with 214.4; Kentucky, with 150.4; Maryland, with 148.6; Tennessee, with 158.7; and Virginia, with 142.2. (Figures based on 1920 statistics.) If we exclude California and Colorado because of the tremendous influx into these states of dying consumptives from all over the country, and if we make allowance for the other states because of the large colored population, we find little Delaware in the lead in helping the grim destroyer—the great White Plague—to do its worst by her citizens.

Delaware, with her 144.4 deaths per 100,000 population, is next door to Pennsylvania, with only 105 deaths and not so very far from New York, with 106.2. These two states were not always so fortunate. Their death-rate in 1911 was 136 for Pennsylvania and 156.3 for New York. But by persistent and intelligent effort, and the expenditure of large sums of money this high death-rate has been gradually reduced to the figures of 1920. Delaware has never spent enough money to bring about such results.

Economy in the expenditure of state funds is a most praiseworthy civic virtue, but what our legislators have done with regard to tuberculosis is not economy but rank extravagance. The average number of deaths from tuberculosis is about 400 a year. It has been estimated that the cost of each death is $250. This represents an expenditure of $100,000. There are about seven active cases of tuberculosis for each death. That means that we have in Delaware about 2,800 cases. As a rule, we may count on at least two years illness for each case, and at a minimum cost of $20 a year, $56,000 is the toll paid by the consumptives for medical care. As tuberculosis attacks persons during their most productive period, a definite economic loss is sustained by withdrawing the consumptives from production. This loss may be estimated conservatively at $500 per year per case, or a total of $1,400,000.

In other words, the economic loss from tuberculosis in Delaware is at least $1,556,000 per annum.

We do not know the extent of the loss from tuberculosis in cattle, but are quite sure that it does not reach that figure.

We are quite willing to leave the odiousness of the comparison to a legislature that appropriates $32,000 for the eradication of tuberculosis in cattle and only $40,000 for the relief of the poor human consumptives.

Also we are quite willing to leave to the consciences of our legislators to place a money value on the suffering, the misery, the anguish, the distress, the pathos brought into a family by a member afflicted with tuberculosis. Let each legislator who favors economy visualize if he can what would happen if he or his wife, or his son or his daughter in the prime of life, were cut down by tuberculosis; and if he does visualize this let him recall the golden rule: "Do unto others as you would be done by."

With only $30,000 annually for the white consumptives, the commission will be compelled to drop back into the state of three years ago, when few clinics were held and few consumptives could be sent to sanatoria. With the exception of some $5,000 annually for office expenses, the entire white appropriation for 1921 and 1922 was expended on nurses, clinics and maintenance of patients at sanatoria.

By lopping off $15,000 from the appropriation the legislature has crippled the work to that extent, and thus retarded still further the progress so painfully made in gaining control over the "Great White Plague." A. R.

THE COMMISSION MERGER

One piece of health legislation which will please the physicians of Delaware is the merger of the Child Welfare and the Tuberculosis Commissions and the State Board of Health into the State Commission of Health and Welfare.

The three separately functioning bodies will, when the bill becomes operative, be merged into one commission of seven, four doctors and three lay members—women. This smaller body will take the place of twenty-seven commissioners. The apparent advantage of centralization is offset by the loss to the state of the interest and active participation in health matters on the part of twenty representative citizens who served on the commissions.

Delaware is unfortunate in not having representative bodies interested in public health. The Antituberculosis Society is a parlor organization concerned chiefly in maintaining a sanatorium, while a State Health Association formed three years ago had a single meeting. Consequently, there is no organized effort in Delaware to promote public health, and the public has remained indifferent to and ignorant of all health matters.

It will be difficult to carry out a satisfactory program in the face of such obstacles. The new Commission will be confronted with a number of grave problems.

The tuberculosis situation in Delaware is not altogether satisfactory. The death rate is still among the highest in the country and the provisions for hospitalization inadequate. The Child Welfare work has fallen in bad repute with the profession and is at the present time without any definite program. The Board of Health has been marking time, largely because of lack of sufficient funds and also owing to public indifference punctuated by active opposition whenever a progressive measure was attempted.

It will require considerable tact, perseverance, and above all disinterested devotion to the cause to solve the various problems connected with these health agencies. The medical profession of Delaware will be on trial and will be judged by what the four doctors of the Commission will be able to accomplish.

The Brogan Bill died, like the cat, only after the eighth life had been given up. Even then it seems likely to be resuscitated two years hence. A. R.

DELAWARE NEWS ITEMS

Dr. L. A. H. Bishop has been reëlected president of the Dover Board of Health.

This past winter has been the busiest one in many years for the physicians about the state capitol.

Dr. L. S. Conwell, who has been secretary of the State Board of Health, will return to private practice in Camden, Del.

Dr. C. J. Prickett and Mrs. Prickett of Cheswold, have returned from a ten days' motor tour to West Virginia, their former home.

Dr. C. deJ. Harbordt and Mrs. Harbordt, of Dover, motored to Washington and Northern Virginia during the Easter holidays.

Miss Minnie Green from the Lankenau Hospital, Philadelphia, has succeeded Mrs. Elizabeth Johnson, as Superintendent of the Milford Emergency Hospital, Milford.

Miss Ella A. Derick, a graduate of the Hartford Hospital, lately directress of nurses at the Lebanon Hospital, New York City, has been appointed Superintendent of the Physicians' and Surgeons' Hospital, Wilmington.

Kent County Medical Society met at the Hotel Richardson, Dover, on March 7th, and again on April

4th. Papers were read by Drs. Joseph Bringhurst, Wm. Marshall and C. J. Prickett. The general discussion brought out many facts of interest to the average town and country doctor.

The Legislature has just passed a bill to unite the State Tuberculosis Commission, the Child Welfare Commission and the State Board of Health into one organization to be known as the State Health and Welfare Commission. This will legislate the present State Board of Health out of business. The new Commission will consist of seven members, one physician to be appointed by the Governor from each of the four districts and three women at large, one of whom must be a "business woman." The new organization will take over all the duties and work of the three commissions that now function.

Dr. William C. Behen, formerly of Dover, Del., was recently honored by Poland in receiving the "Cross of the Valiant" for his services to the population and army. After the signing of the Armistice, Dr. Behen served with the rank of Major in charge of the American Red Cross Hospital Train No. 1 near Ostrow, during the Bolshevik drive on Warsaw, August, 1920. The citation was sent here by Major K. Mach, military attaché at the Polish Legation in Washington, through the instructions of Major-General P. G. Sosnkowski. During the World War, Dr. Behen served with the Twenty-Seventh Division and after the Armistice enrolled with the American Red Cross, being stationed in Serbia in 1919. He was later sent to Poland.

GENERAL NEWS ITEMS

The April number of the new *Hospital Buyer* has just come to hand. As this little publication maintains the standard of the Council on Pharmacy and Chemistry, it will doubtless be of real value to those who are interested in hospital supplies.

The Salt Lake County Medical Society is arranging for the entertainment of visitors who may be able to stop over en route, either going to or coming from the American Medical Association meeting at San Francisco. The stopover can be made inexpensive. The Society has already appointed committees to greet and assist in making arrangements to see the city and, if possible, some of the surrounding territory, which may include wonderful mountain drives; a visit to Saltair, which is situated on Great Salt Lake; and a visit to the great copper mines in this vicinity.

Large parties intending to make this stopover are requested to give us notice as far in advance as possible as to the number in party and length of time of stopover. Any inquiries relative to this matter may be directed to the Secretary, Dr. Floyd F. Hatch, Deseret Bank Building, Salt Lake City, Utah.

Under the auspices of the Committee on Commemorative Journeys in France, 281 Fifth Avenue, New York, a visit to France has been outlined which coincides with the celebration of Louis Pasteur's Centenary. As this is sponsored by the French Government, it will give participants free access to many highly interesting official functions not ordinarily open to visitors.

Thus, in Paris, receptions will be tendered by the Pasteur Institute, by the School of Medicine, by the Department of Health, and by other civic and professional bodies. In Strasbourg, the International Hygiene Exhibition's officials will join hands with the municipal authorities in welcoming the party; while the three best-known thermal stations of France—Aix les Bains, Evian and Vichy—have extended a special invitation.

Both Dôle and Arbois, respectively Pasteur's birthplace and his youth's home town, will be visited, as will also the Argonne and other important battlefields and the great American cemetery at Romagne. Ten days of motoring through the Vosges, the Jura and the Alps will disclose the ravishing beauty of France's eastern ranges.

The time for the journey in France between July 11th and August 18th has been chosen because it is the period of the year when most professional men can best afford an absence from this country. Participants can leave New York as late as July 4th, and be back as early as August 25th. The Executive Committee have made arrangements for holding space on ocean steamers scheduled to leave on and about the above dates, and will gladly give further particulars on request. For further information write L. J. Garcey, General Agent, Railways of France, 281 Fifth Ave., New York.

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C.	July 9, 1923
At Chicago, Illinois	July 9, 1923
At San Francisco, Cal.	July 9, 1923

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must satisfactorily pass oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

BOOKS RECEIVED

The Riddle of the Rhine. Chemical Strategy in Peace and War. By Victor Lefebure, Officer of the Order of the British Empire, with a preface by Marshal Foch and an introduction by Field-Marshal Sir Henry Wilson, Bart., Chief of the Imperial General Staff. New York: E. P. Dutton & Company, 681 Fifth Avenue.

The Debt of Medicine to the Fine Arts, by J. A. Nixon, C.M.G., M.D., Cantab., F.R.C.P., from "The Bristol Medico-Chirurgical Journal, January, 1923. J. W. Arrowsmith, Ltd., 11 Quay Street, Bristol, England. Price 75c net.

The Patient's Viewpoint. By Paluel J. Flagg, M.D., author of "The Art of Anesthesia." The Bruce Publishing Company, Milwaukee, Wis. Price $1.30.

The Surgical Clinics of North America. February, 1923. Vol. 3, No. 1, Philadelphia Number. Published bi-monthly. W. B. Saunders Company, Philadelphia and London.

The Heart in Modern Practice—Diagnosis and Treatment. By William Duncan Reid, A B., M.D., Chief of Heart Clinic at the Boston Dispensary, etc. Thirty-two illustrations. Philadelphia and London: J. B. Lippincott Company. Price $5.00.

(Concluded on page xiv.)

X-RAY FLUOROSCOPIC AND RADIOGRAPHIC DIAGNOSIS WITH A SINGLE UNIT

IN many roentgenological laboratories and general practitioners' offices a single unit is needed for fluoroscopic or radiographic diagnosis.

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In addition there are such refinements as a circuit breaker for protecting operator, patient and apparatus; the auto-transformer control which permits the selection, through one lever, of any back-up spark from three to five inches; the high-tension, closed core, oil-immersed transformer; and the control stand with its long cable and its convenient on-and-off foot-switch, and its caster-mounting which makes movement in every part of a room possible.

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VICTOR

BOOKS RECEIVED

(Concluded from page 574)

Inflammation in Bones and Joints. By Leonard W. Ely, M.D., Associate Professor of Surgery, Stanford University. One hundred and forty-four illustrations. Philadelphia and London: J. B. Lippincott Company. Price $6.00.

Diseases of the Rectum, Anus and Colon. By Samuel Goodwin Gant, M.D., LL.D., Professor and Chief of the Department for Diseases of the Colon, Rectum and Anus, at the Broad Street Hospital, Graduate School of Medicine, New York City. Three octavo volumes, totalling 1,616 pages with 1,128 illustrations on 1,085 figures and 10 insets in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $25.00 net.

BOOK REVIEW

ESSENTIALS OF SURGERY. Archibald L. McDonald, M.D., Lecturer in Surgery, St. Luke's Hospital, Duluth, Minn. Second Edition. Pp. 293. Illustrated. Cloth. Price $2.50. Philadelphia: J. B. Lippincott Co., 1923.

This little volume represents an elaboration of the lectures delivered by the author to the Nurses' Training School of the above-named hospital. It is an ingenious admixture of bacteriology, pathology, surgical diagnosis and surgical treatment, and is unique in that nursing technique is entirely omitted. The author is rather conservative in his statements, a most praiseworthy attitude to assume before an audience of nurses.

As an illustration of the care with which the text is written, he speaks at some length of the mental preparation of the patient for operation, and concludes, "The unvarying rule is that all inquiries are to be referred to the surgeon." His work is up-to-date, including references to the use of pituitrin for gas pains, though no mention is made in this connection of the sometimes more desirable effect of eserine. Practical hints abound, such as the sometimes neglected caution not to use mecurial solutions on top of iodin, and the equally important one as to the analgesic effect of carbolic dressings. Good advice is given the nurse who sometimes has to care for a case before the arrival of the surgeon, as illustrated by the caution not to give morphine or cathartics in suspected acute appendicitis. The text concludes with an admirable chapter on gynecological diseases, and an excellent glossary. For the purposes of review and examination, demonstrations are planned at the end of each chapter. This feature alone would commend the work to the average training school lecturer.

The only possible criticism of the work is that it may perhaps be a little too deep for the average student nurse to master, but this criticism would not be valid if the text were supplemented by charts, demonstrations and adequate lectures. In this connection it may be said that the work falls in line with the present trend in nursing education, i. e., the nurses are either undertrained or overtrained; undertrained for administrative work, and overtrained for practical work. This volume, when mastered by the nurse, gives her a most excellent understanding of surgical diseases, a subject of such great importance that she could scarcely be overtrained in it. W. E. B.

NEW AND NONOFFICIAL REMEDIES

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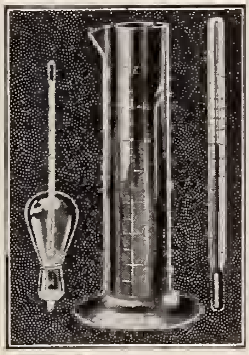

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(Concluded on page xviii.)

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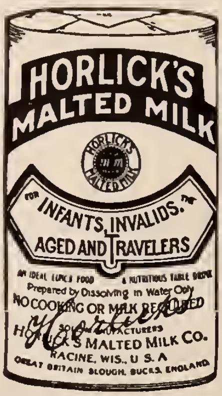
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ORIGINAL ARTICLES

THE OPERATIVE TREATMENT OF SUPPURATIVE MENINGITIS

A SECOND REPORT OF CLINICAL EXPERIENCES IN SUBARACHNOID IRRIGATION, AND OF POSTMORTEM OBSERVATIONS*†

WELLS P. EAGLETON, M.D.
NEWARK, N. J.

SUPPURATIVE MENINGITIS FROM ADJACENT INFECTION, OTITIC OR NASAL: Meningitis is an infection of the cerebrospinal fluid circulatory system; which system envelops and permeates all parts of the brain. The circulating fluid originates in the choroid plexus, passes through the ventricles, into the basal cisterna and then over the cortex, from which it is discharged into the large venous sinuses.

FUNCTIONS OF THE CEREBROSPINAL CIRCULATORY SYSTEM: The cerebrospinal fluid system is very important in the nutrition of the brain: into it are emptied the products of the brain's metabolism. Within it is contained the protective mechanism of the brain against infection. It is the chief agent whereby infection which has actually entered the system is removed.

Nourishment of the cerebral tissue is furnished primarily by the blood from the cerebral capillaries. Accompanying the intracerebral blood-vessels are prolongations from the cerebrospinal fluid system, so that it is in intimate relationship with the blood circulatory system, the blood of the capillaries being separated from the perivascular prolongations of the cerebrospinal fluid system by only a layer of epithelial cells.

The proof that the protective mechanism of the brain is contained within, and operates by means of the intimate normal relationship between the cerebrospinal fluid and the blood circulatory system, is furnished by the experimental fact that, although microörganisms can normally circulate freely in the blood stream without producing a meningitis, any severe disturbance either of the blood circulatory or of the cerebrospinal fluid system, in the presence of microörganisms free in the blood stream will cause a meningitis. Experimentally, with bacteria free in the blood stream, if the blood circulation be upset, either by pressure on the carotids or by the temporary cessation of the heart, this hemic circulatory disturbance in some way upsets the normal action of the protective mechanism and microörganisms from the blood stream will enter the cerebrospinal fluid circulatory system, a meningitis following.

On the other hand, in the presence of a bacterial blood stream infection, if a slight alteration of the cerebrospinal circulatory system is produced—such as occurs from the removal by lumbar puncture of a few drops of fluid—this disturbance of the normal relationship between the cerebrospinal fluid and blood circulatory systems by an otherwise harmless procedure, will allow the free microörganisms within the blood to enter the cerebrospinal fluid system, and produce a meningitis.

Clinically, then, a lumbar puncture in the presence of a blood stream infection may be a very dangerous procedure, as a meningitis will result if it is performed at the exact moment when bacteria are free in the blood stream. The reason why meningitis does not more frequently follow lumbar puncture in septic thrombophlebitis is probably because the microörganisms of the blood stream have already been acted upon by the protective mechanism of the blood itself at the time of the puncture.

This experimental fact has been established clinically. It has possibly occurred in three cases in my experience. One positive case with autopsy I have reported elsewhere.[1]

In a later case, the day following an operation for septic sinus thrombosis, as high temperature and great restlessness continued, a physician performed a lumbar puncture, which liberated clear sterile fluid under pressure; a few days later the fluid obtained by lumbar puncture contained microörganisms.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922, by invitation.

†First Report: "The Operative Treatment of Suppurative Meningitis; with Especial Reference to Irrigation of the Cranial and Spinal Subarachnoid Spaces; and the Importance of Protective Meningitis from a Prognostic and Therapeutic Standpoint. With an Analysis of the Cases of Recovery—Exclusive of Meningococcic—Reported in the Literature." President's Address; Transactions of the American Otological Society, 1921; also, Laryngoscope, page 1, January, 1922.

In the third case, six days after a mastoid operation in the presence of high temperature, with a positive blood culture of streptococcus hemolyticus, a lumbar puncture revealed 100 cells without microörganisms. The removal of the clot from the sinus was followed by negative blood cultures, but without remission of the temperature. No meningeal symptoms developed until six days later, when a second lumbar puncture liberated a *sterile* cloudy fluid with 5,000 cells. At the autopsy the meningitis was found to be confined chiefly to the cerebral hemispheres near the median line, the basal cisterna being free.

In this case, location of the meningeal infiltration certainly would point to the meningitis having originated from a blood stream infection, as experimentally produced meningitis (of blood stream origin) first attacks the vertex, in contradistinction to meningitis of aural origin which primarily attacks the basal cisterna, to which area the infection is largely confined.

CONTROL OF INFECTON BY THE CEREBROSPINAL FLUID CIRCULATORY SYSTEM: The arachnoid cells lining the spaces are the chief agents in the removal of infection. When the cerebrospinal fluid system itself is invaded by bacteria, these cells enter its pathways, act as phagocytes encircling and lysing the microörganisms, carry them through the system, and deposit them in the blood stream.

The cerebrospinal fluid circulatory system also plays a large part in the repair of injuries to the brain itself. In gunshot wounds, in trauma resulting from the surgeon's knife, or in the destruction of cerebral tissue from suppuration in brain abscess, it is the cells of the piarachnoid that largely repair the damage.

SUMMARY: The cerebrospinal fluid system may be regarded as having the following functions; it is necessary for the proper performance of the brain metabolism; it is the chief factor in the protective mechanism of the brain against infection and for the control of infection; it is a factor in cerebral and meningeal repair.

THEORETICAL CONSIDERATIONS IN THE SURGERY OF MENINGITIS: Meningitis is an infection of this system; consequently the following clinical facts, based on its functions, should enter into all surgical considerations of meningitis:

First—Meningitis is an infection of a circulatory system which is necessary for the proper nutriment of the brain, for which reason the surgeon should aim if possible not to handicap further the system which is already impaired.

Second—In view of the profound cerebral reaction which frequently follows the withdrawal of a moderate amount of cerebrospinal fluid by lumbar puncture, it is logical to assume that if a large quantity is to be removed, it should be replaced immediately by a non-irritating fluid of similar composition. This is in order that the system may continue to function normally; for a similar, though much less obvious reason, that blood is transfused after severe hemorrhage.

Third—As the invaded system normally contains the chief provisions for the control of infection, nature's own protective mechanism has broken down. The surgeon's problem is how to restore it.

SURGICAL STAGES OF MENINGITIS:

(a) *Meningitis in the Primary Stage, a Limited Process, and Possibly Amenable to Treatment:* In the primary stage of suppurative meningitis, the result of the extension of a suppurative process from an adjacent focus (such as the ear), *the infection is limited to an area of the system.* This is an important pathological fact, which I did not appreciate in my previous report, viz., that it is only in the terminal stage that bacteria invade the whole system.

Postmortem observations lead me to believe that following this primary stage, and frequently for a considerable period subsequently (even after a few microörganisms are demonstrable in the fluid from the lumbar region) the infective process is chiefly confined to the basal cisterna.[2] This explains why the clinical symptoms of meningitis, even until late in the disease, are entirely of basilar origin—stiff neck, vomiting, ocular paralysis, etc. A study of the differences in the character of the exudate of the base and hemispheres makes me regard the latter, at least until the terminal stage (the exudate covering the hemisphere, which is the outstanding process at the time of the autopsy) as in reality largely an overflow process, chiefly reparative, in nature's effort to control the infection, the multiple patches being caused by the leucocytes as they endeavor to carry the bacteria through the system and deposit them in the blood stream.

In a recent case of fulminatory meningitis of aural origin from infection of pneumococcus mucosa, incision of the dura over the middle fossa was not followed by the escape of any fluid, showing that the piarachnoid spaces of this area were not distended. An occipito-atloid puncture liberated an enormous quantity of turbid infected fluid under excessive tension.

The postmortem demonstrated that, although the cortex had many small patches of exudate, the chief area involved was the basal cisterna, with multiple small hemorrhages into the piarachnoid.

(b) *Suppurative Meningitis in the Terminal Stages Almost Uniformly Fatal:* It has been established experimentally that the ventricles are not affected in the early stages of the meningitis. When they are once infected, the adjacent brain tissue itself is invaded.[3] The case is then hopeless. But in the terminal stage, as soon, in fact, as the microörganisms have definitely invaded the whole cerebrospinal fluid circulatory system of the brain and cord (as shown by large numbers of microörganisms in the fluid obtained by lumbar puncture) any surgical procedure promises small hope of recovery. From a surgical standpoint, both this and the stage of ventricular invasion are terminal stages.

In the literature of suppurative (non-meningococcic) meningitis, less than forty cases have recovered in which bacteria were free in the fluid from lumbar puncture.[4]

When we consider the frequency of the disease, the numerous operations that are performed yearly for its relief, it must be admitted that if we are to attack the disease surgically, with a fair chance of success, either some new method must be devised, or there must be modification of the views which for long have been the basis of our operative procedures.

Surgical Treatment of Infection in General: In planning a surgical attack on meningitis it may be of advantage to consider how infection is controlled by the tissues in general, then to examine what difference exists between the meninges and those parts of the body that so uniformly recover from infection, and from this viewpoint try to determine whether the principles of treatment which are usually successful in other tissues are applicable to the meninges.

Drainage of Tissues of the Body in General, an Accepted Surgical Principle: Infection of most tissues of the body can be controlled by drainage. This is a fundamental surgical principle. Abscesses of the bone or soft part, or infections of the appendix or gall-bladder are uniformly treated by drainage, and the majority of the cases recover. In a similar way the surgeon successfully combats infection of the blood-vessels, such as lateral sinus thrombosis by local drainage; but cases of meningitis, in spite of all efforts at drainage, have almost uniformly died.

Drainage of a Whole Circulatory System Physiologically Unsound: It is impossible to drain a circulatory system completely; and I think that this is one of the reasons operative procedures have failed. We treated meningitis by attempted drainage of the circulatory system, which contains within itself the elements for the control of infection. It would be almost as logical to combat a blood stream infection, secondary to an infective thrombosis of the lateral sinus, by removal of all the blood.

Clinical experience and experimental evidence both testify that the placing of any form of drainage material into the subarachnoid space does not control infection; it simply irritates the already inflamed leptomeningeal membranes. It is true that a large amount of fluid is discharged, but the bulk of this fluid is not infected cerebrospinal fluid. It is an exudate produced by the tissues in nature's effort to expel the irritating drain. Furthermore, the longer the drainage is allowed to continue, the greater the risk of a secondary infection of the cerebrospinal fluid system; as demonstrated by the familiar experience that a cerebrospinal leak, following an intracranial operation, instead of preventing it, is frequently the direct cause of infection.

Blood Stream Bacteremia Controlled by a Special Process Not Available in the Cerebrospinal Fluid System: A blood stream infection, such as accompanies a thrombophlebitis, is controlled surgically by local drainage, viz., by the removal of the infected clot from the blood circulatory system. After its evacuation nature removes the remaining microörganisms from the blood stream by a special process. The bacteria cause minute clotting of the blood; these small clots are caught in the small vessels of the spleen, the kidneys, the lungs and liver, and, acting as irritants, are attacked and lysed by the phagocytes of the blood and tissues. An infected thrombophlebitis is an infection of a circulatory system, and its control is provided for by a mechanism that does not exist in the cerebrospinal circulatory system, that is, the clotting of the blood.[5]

Infection of the Tissues Themselves Largely Controlled by Phagocytosis: Infection of the soft parts in general is controlled chiefly by the action of phagocytes from the tissues and from the blood. The cerebrospinal circulatory system contains phagocytes, the cells of the arachnoid having definite phagocytic properties. When the cerebrospinal system is invaded by bacteria these cells remove the bacteria from the pathways of the system if the infection is not overpowering. If the infection is profound, the accompanying toxemia (the result of bacterial invasion) occasions a paralyzing influence on the phagocytic arachnoid cells.

Toxicity of Effusions: It is an experimental fact that while the blood of an infected animal is only slightly more toxic than the blood of a normal animal, the fluid of an effusion (the result of a bacterial infection) is highly toxic (Teale).[6] This is true of all bacterial effusions, whether situated in the cavity of the peritoneum, the soft tissues, or in the subarachnoid spaces of the cerebrospinal circulatory system. The cerebrospinal fluid that occurs adjacent to an infection is no longer normal spinal fluid, it is largely a toxic effusion.

This I believe is the explanation of the recoveries that have followed the operative opening of the abdomen in tubercular peritonitis; the improvement being the result, not, as is generally supposed, from exposure of the inflamed peritoneum to the air, but is due to the escape of the toxic fluid from the peritoneal cavity.

Summary of Fundamental Differences Between the Control of Bacterial Invasion of the Cerebrospinal Fluid and of the Blood Circulatory System: (1) Clotting (the essential preliminary to the elimination of infection from the blood stream) is not available in the cerebrospinal fluid circulatory system; (2) the fluid which fills the subarachnoid spaces is no longer normal cerebrospinal fluid but is largely a toxic exudate; and (3) the mechanism which the cerebrospinal system has for the control of infection is itself attacked by the profound toxemia from this exudate.

Pathology of Suppurative Meningitis: In the presence of an infection from an adjacent primary focus (such as the ear or nose) the protection reaction of the tissues, in their effort to prevent invasion of the meninges and the brain, occasions at first an internal pachymeningitis. For some reason, usually by way of a perivasculitis or a retrograde thrombophlebitis of a vein passing through the dura of the infected area,[*] this protection is broken through, and an infection of the cerebrospinal fluid system adjacent to the area of primary infection occurs. *The involvement of the cerebrospinal fluid system is shown by an increase in and alteration of the composition of the cerebrospinal fluid of the area invaded*, and clinically, by the fluid obtained from lumbar puncture being under tension—with perhaps a high cell-count—showing increase of the fluid from irritation. The chemical composition, as well as the appearance of the fluid adjacent to the area of primary infection, is different from the fluid of the lumbar puncture. The infected adjacent fluid is altered in its color, being yellowish, while normal fluid is colorless. In one of my cases, it was reddish, as if blood-stained. The fluid is coagulable, while normal cerebrospinal fluid is noncoagulable. This altered coagulable fluid is largely an exudate, and is highly toxic.[†]

Jenkins, in an early case of meningitis, has demonstrated microörganisms in the fluid adjacent to the infection, although the fluid from the lumbar puncture was sterile, and the cell count very low—48.[7]

In the initial stage of meningitis the increased amount of fluid obtained from the lumbar region is of more or less normal character; its cells are largely the result of a protective reaction.

This was demonstrated in a case of meningitis secondary to a sinus thrombosis of the basal veins, in which, at autopsy, the infection was limited to the subdural space, but the inflammatory protective exudate within the cerebrospinal fluid system was sterile. This sterile subarachnoid space exudate followed in a general way the sulci of the convolutions as they went towards the arachnoid granulations; showing that the excessive amount of fluid obtained from a lumbar puncture was simply the evidence of an *adjacent* localized infection, the latter being entirely outside of the cerebrospinal fluid circulatory system. The exudate, however, plugged the spaces of the subarachnoid and by occlusion of the small intra-arachnoid communications seriously interfered with the normal functions of this system, and caused additional toxemia.

In another case, the meninges at autopsy failed to exhibit microscopical evidence of meningitis, but the fluid from the lumbar region at an early stage contained a few pneumococci and occasioned a fatal peritonitis when injected into an animal.[‡]

Principles of Surgical Treatment: Pathologically, then, in the early stages of meningitis, the chief indications are: (1) The early removal of the infected cerebrospinal fluid adjacent to the area of primary infection (ear, nose or fractured skull) as well as the drainage of the infection in these structures. This well-known surgical procedure of itself will cure a considerable number of cases, especially if performed early. My results have improved since I have realized the importance of early operation.

(2) In addition I believe it to be advisable in the majority of cases to substitute for the toxic cerebrospinal fluid a non-irritating fluid by subarachnoid irrigation; thus removing a paralyzing influence and allowing the protective mechanism of the meninges to act more efficiently. Irrigation is surely indicated when there is reason to believe that the cerebrospinal fluid system as a whole, is infected.

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[*] I have demonstrated such a retrograde thrombophlebitis at autopsy in one of my cases.

[†] I have no laboratory evidence of the latter statement. The only case in which sterile fluid from the lumbar region of a case of suppurative meningitis limited to the cerebrocortex was injected into an animal, failed to exhibit any toxic influence on the animal. (Dr. Harrison S. Martland.)

[‡] "There were several lumbar punctures done. The first showed a clear fluid under pressure but negative in every other way. The second fluid about two days later was cloudy under pressure; three plus globulin; 133 cells, chiefly polymorphonuclears; Gram positive diplococci in capsules, having the morphology of the pneumococcus. A mouse was injected with the second fluid intraperitoneally and became very sick after about 18 hours. The mouse was killed at the end of 24 hours and autopsied. Autopsy showed no peritonitis but pneumococci were found in the heart's blood." Loewy, Otto, and Asher, Yaguda, Beth Israel Hospital, Newark, N. J.

Details of Operation for Suppurative Meningitis: (1) The primary focus of infection must first be thoroughly removed, after which is attacked the adjacent infected area of the cerebrospinal system at its most probable site of infection, in order to evacuate the localized infected fluid.

If the labyrinth is the source of infection, it must be opened and the infected effusion in the cisterna pontis allowed to escape by way of the internal auditory meatus (translabyrinthine drainage).[8] Neumann's labyrinth operation followed by an incision of the dura behind the petrous pyramid, does not allow a free evacuation of fluid because the herniation of the cerebellar substance into the opening immediately closes the dural opening. It has, however, given fairly satisfactory results in my hands and, theoretically, should be the operation of election whenever the posterior semicircular canals or the ductus endolymphaticus are the route of invasion, which cannot be diagnosed except at operation.

When the infection has entered the cerebrospinal fluid system by way of the middle fossa, the drainage of the infected area should be accomplished by a small incision in the dura through the area of invasion—the roof of the antrum or tegmen—care being taken to open into but not puncture through the arachnoid. The dural opening should be large enough to permit of the introduction of a small spatula for the evacuation of the fluid from the base of the middle fossa. If the dural opening be too large, it may occasion a local necrosis of the brain or piarachnoid, from drying or cerebral herniation.

The evacuation of infected fluid is not drainage in a true sense, no effort should be made to establish permanent drainage, as continuous drainage of the subarachnoid space is not only useless, but harmful. It is apt to cause injury to the as yet uninfected brain tissue. There is no case of recovery following it. (Haynes operation.[9])

The cases of recovery following the introduction of drainage tubes[10] and silver wire into the cisterna pontis through the internal auditory meatus after the destruction of the labyrinth have simply drained a localized area of the system.

(2) *Subarachnoid Irrigation; a Replacement Procedure:* The value of subarachnoid irrigation consists, in my opinion, in the removal of a highly toxic material from the pathways of the system and *its replacement by a non-irritating fluid* of the composition of normal cerebrospinal fluid *at the temperature of the body.* The original conception that it is possible to irrigate through an infected cerebrospinal circulatory system is fallacious. Clinical experience and experiments on the cadaver have convinced me that the small size of the openings between the subarachnoid spaces and their occlusion in suppurative meningitis by exudate, will prevent the irrigated fluid from running freely from the frontal region, through the meshes of the piarachnoid, to be discharged from the cerebello-medullary cisterna. But irrigation of the piarachnoid space of the frontal region will force out a quantity of fluid (which is more or less highly toxic), replacing it by a nonirritating solution; although in my experience the amount introduced is always much larger than that recovered.

Cases of Recovery from Suppurative Meningitis from Subarachnoid Irrigation: I have only two cases to report of recovery from meningitis by subarachnoid irrigation in which the fluid obtained by lumbar puncture contained microörganisms, in addition to one without microörganisms. In both of the former the original focus of infection played no part whatsoever in the surgical treatment, as at the time of the operation the meningitis was uniformly distributed over the whole cerebrospinal fluid circulatory system. From these successful cases and from my experience with ten additional cases of subarachnoid irrigation and many postmortem examinations, I have come to my present opinions regarding the treatment of meningitis, which differ in important respects from those expressed in my previous report.

The history of the cases of recovery are briefly as follows:

Case 1.—From the Newark City Hospital. Compound fracture of skull; doing well but persistent headache and irregular temperature. On the 15th day became unconscious. Papilledema, Kernig. Lumbar puncture revealed a cloudy fluid containing diplococci. Interspinous injection of meningococcus serum; subarachnoid irrigation, from frontal to occipito-atloid and lumbar regions. Immediate recovery.[11]

Case 2.—Case of Dr. Wm. H. Cook, Newark Homeopathic Hospital. Appendicitis operation, followed 17 days later by high temperature intense pain in the back, thighs and legs, stiff neck, Kernig and headache. Lumbar puncture: cloudy fluid containing pneumococci. Subarachnoid irrigation. Immediate recovery.

These two cases are not of great importance. They add, however, two to the meager number of cases of recovery from general suppurative meningitis with microörganisms free in the cerebrospinal fluid system.

Case 3.—Case of Dr. Ambrose Dowd, Newark Eye and Ear Infirmary. Child. Double running ears for two weeks. Brought into hospital unconscious. Kernig, stiff neck; temperature 104 degrees. Thought to be dying. All conditions pointed to general suppurative meningitis. Lumbar puncture revealed fluid under great pressure; cell count 40, globulin greatly increased, Levinson's test for T. B. positive; no organisms found in either smear or culture. Operation: opening of infected mastoids (filled with granulation tissue); incision of dura adjacent to infection, with evacuation of large amount of fluid, followed by subarachnoid irrigation. Immediate recovery, temperature falling to normal within a few hours after the operative procedure.

Comment.—It may be justly claimed that this child had simply a meningismus; that it was the removal of the primary focus of infection of the ears that was the beneficial agent.

I would answer that I have seen many cases of meningismus. I have had several recover as the result of the eradication of the primary focus and the incision of the dura,[12] but I have never witnessed the immediate relief from all cerebral and toxic symptoms that occurred in this case. This surprising improvement has uniformly followed the subarachnoid irrigation with a single exception.

All of the cases, except those reported above, have later died; but all immediately following the first irrigation have shown a great improvement; the temperature has fallen within a few hours to, or near normal, and the patients have felt and looked well. Something favorable has happened which does not occur in other forms of treatment. This I have attempted to explain in the present communication. This favorable influence certainly should be utilized in an operative attack upon meningitis. The question to be decided is when, and in what class of cases, it should be employed.

Explanation of Improvement from Subarachnoid Irrigation

In carefully reviewing my cases I have come to the conclusion that the evidence warrants the assumption that the startling relief after subarachnoid irrigation is due, not to the removal of the bacterial invasion, but to the irrigation removing deleterious products from the cerebrospinal fluid system. The cloudy fluid filling the spaces, because of its effusive character, causes a profound toxemia, the microörganisms found in the fluid from the lumbar region representing, not a general invasion of the whole system, but an overflow of a local infection.

This view is substantiated by clinical evidence as 25% of all general pneumococcic invasions are microscopically found to be associated with a protective meningeal reaction,[13] and it is well known how profound a toxemia is frequently present (especially in pneumococcic meningitis of aural infection) for many days before microörganisms can be demonstrated in considerable numbers in the lumbar fluid.

When to Irrigate: Postmortem observations demonstrating the extent and occluding character of the meningeal exudates, have convinced me that, in the terminal stage, subarachnoid irrigation is mechanically impossible. Certainly bacteria cannot be completely eliminated by any form of surgical treatment. On the other hand, clinical experience and postmortem findings lead me to believe that many of the cases of suppurative meningitis actually die from the profound toxemia incident to the absorption from the cerebrospinal fluid system of the deleterious products of bacterial invasion, before the bacteria themselves have completely invaded the system.

This is not infrequently the case, especially in pneumococcic infection, concurrent with or secondary to middle ear suppuration. In one case at postmortem the brain gave slight microscopic evidence of meningitis, although pneumococci had been present in moderate numbers in a clear fluid not under pressure from the lumbar region. The autopsy also revealed a purulent exudate in both middle ears and in almost all the accessory sinuses of the nose, as well as a pneumococcic infiltration of the lungs. The child *from the very first* was apparently suffering from a cerebral toxemia, as shown by stupor, restlessness, localized paralysis of one arm, lateral deviation of the eyes, and nystagmus. The pneumonia and sinus exudates were, in my opinion, the result of blood stream infection, although the cerebrospinal fluid system had succeeded in keeping its pathway free from general invasion, in spite of the profound cerebral toxemia.

Until recently, it has been my practice not to irrigate until the existence of a general suppurative meningitis was demonstrated by microörganisms in the lumbar fluid. It is possibly because of this delay that so few of the cases have recovered. I believe that, to be successful, subarachnoid irrigation must be performed during the stage of toxemia, prior to the complete invasion of the cerebrospinal circulatory system by bacteria, although bacteria may be present in small numbers in the fluid obtained from the lumbar region.

Dangers: So susceptible is the brain to foreign substances that, if any fluid is to be *passed through* the subarachnoid spaces without causing profound toxemia with circulatory disturbance and respiratory embarrassment, its chemical composition must closely resemble the normal cerebrospinal fluid, in addition to which it must contain a small amount of calcium, and must be at the temperature of the body.[14] Even distilled water is highly toxic.

In one of my cases, after a subarachnoid irrigation, 10 c.c. of meningococcic serum *at the temperature of the room* was passed by gravity into the basal cisterna, and downward toward the lumbar region, a lumbar puncture needle being present in the lower part of the spine. This was immediately followed by an alarming collapse. The respiration became shallow, the pulse rapid, irregular, and at times imperceptible. For hours it was thought the child would die, although but a few minutes previous over 100 c.c. of a warm modified Ringer's solution had been passed through the cerebral and spinal subarachnoid spaces without appreciable shock, and a similar meningococcic serum had been *injected into* the spinal canal on two previous occasions without depression.

Deductions from Personal Experience with Subarachnoid Irrigation. First: A temporary startling improvement has uniformly followed subarachnoid irrigation in all of the thirteen cases, with one exception, of suppurative meningitis containing microörganisms in the fluid obtained by lumbar puncture. Two such cases, have recovered and one without microögranisms in the fluid of the lumbar region. None are above the suspicion of having belonged to the type which might have recovered without surgical intervention.

Second: The second irrigation is not followed by this improvement.

Third: Subarachnoid irrigation is safe when properly performed. It does not occasion any greater shock than other protracted operations—not as much as the usual intradural operation consuming the same amount of time.

Fourth: It is a highly technical procedure. Any slight deviation in technic during a subarachnoid irrigation may be immediately fatal.

Fifth: Autopsies performed after subarachnoid irrigation have demonstrated that, with proper technic, there should be little or no hemorrhage; also that the area of the inlet canula is free from adhesions; both of which would warrant the assumption that irrigation itself, if properly conducted, does not cause meningeal irritation at the site of outflow or inflow.

If, however, great care is not taken in the introduction of the inlet canula, a pial vessel may be injured, or the inflowing fluid may cause a distension of the subdural space, and occasion an extensive thin flat layer of hemorrhage into the subarachnoid or subdural spaces. Both have happened to me. In one case, at the time of the irrigation no blood appeared in either the occipito-atloid or lumbar puncture needles, but at autopsy there existed extensive flat hemorrhage in both the subdural and subarachnoid spaces, limited to the irrigated side, with its greatest thickness parallel to the superior longitudinal sinus. This followed rupture of one of the veins entering the superior longitudinal sinus from distension of the subdural space. I cannot believe that the accident contributed in any way to the patient's death, the hemorrhage having been too thin to have exerted a severely depressing influence. It is noteworthy that this case, with complicating subdural and subarachnoid hemorrhage, was the only one that failed to show a startling improvement after irrigation.

Sixth: Subarachnoid irrigation must have a stimulating if not an irritating effect on the cerebrospinal fluid system, because, in one instance, the fluid obtained by lumbar puncture prior to the irrigation, contained 300 cells with microörganisms, while that obtained the day following the irrigation had 3,000 cells, thus confirming the experimental observations of Wegeforth and Essick.[15]

TECHNIC OF SUBARACHNOID IRRIGATION

Preparation: As irrigation necessitates operating in both a clean and a contaminated field, the following procedure is suggested, for which a team of trained workers is necessary:

(1) Operator.

(2) First assistant to perform lumbar puncture, to pass and hold the inflow canula and to control its flow.

(3) Second assistant to regulate temperature and amount of inflowing fluid. Neither assistant should touch the infected areas of the mastoid or of the brain.

(4) Nurse to pass instruments and hold retractors.

The patient should be wrapped like a papoose in a canvas bag or two sheets, going from neck to feet, one sheet from the lower part of neck to lumbar region, the other from lumbar region to feet, in order that the patient can be easily rotated from side to side without disarranging the towelling.

Draping: The operator outlines on the skin at least two holes in the frontal region. If the left side is to be used, care should be taken to keep well away from the speech center. He likewise defines the line of median raphé in the neck and makes a cross cut where the needle for the occipito-atloid puncture is to enter. If no previous mastoid operation has been performed, the operator should now outline the incision to expose the infected area of the temporal bone.

He then covers the patient's whole head with a wet piece of gauze followed by proper towelling, which should admit of exposure of the face, the mapped-out holes in the frontal, occipito-atloid and temporal regions.

Operative Procedure: As it is planned to perform all aseptic work first, the operator should (1) drill holes in the frontal region; (2) pass the occipito-atloid needle, but on reaching the fluid, should immediately stop the flow by the replacement of the stilette.

(3) He then orders the passage of the lumbar puncture needle by the first assistant. When the fluid is reached this stilette is also immediately replaced. The first assistant should then go to the patient's head and prepare to introduce the inlet canula in the frontal region.

All the work in a clean field having been performed, the operator may now (4) perform the mastoid or labyrinth operation and (5) liberate the infected fluid. If, on puncturing the dura, the brain protrudes, as it is apt to do when the subarachnoid spaces of the cortex instead of the cisterna are opened, the stilette from the occipito-atloid needle should be removed, and enough fluid evacuated to permit incision of the dura and the passage of a small flat spatula in the subdural space adjacent to the infected area.

The first assistant now (6) inserts the inlet canula and (7) commences the irrigation; during which the operator watches the opening in the temporal region and at the same time counts aloud the rate of outflow from the occipito-atloid needle, as "stream-1-2-3" (drops) the nurse doing the same for the lumbar region.

Toward the end of the irrigation, the patient is rotated in order that the infected area in the temporal region will become the lowest part of the body. During this turning the occipito-atloid needle should pass upward and the face downward.

Theoretical Physiological and Pathological Indications as to Method of Subarachnoid Irrigation: To meet the pathological indication that in the early stages the infection is limited to the basal cisterna, if incision of the dura over the middle fossa fails to obtain fluid, the surgeon should proceed to enter the basal cisterna (either in the posterior fossa by way of the labyrinth, along the posterior surface of the petrous) or else to open the cisterna at the base of the middle fossa anteriorly to the ear by the gasserian ganglion (Cushing-Lexner) route of approach, puncturing the dura just externally to the ganglion. To meet the physiological indication that irrigation be in the direction of the physiological flow, subarachnoid irrigation should theoretically proceed from a canula introduced in the occipito-atloid region forward through the basal cisterna, the outflow being provided for by an incision in the dura of the middle fossa below the temporal lobe, just external to the cavernous sinus and the gasserian ganglion.

As yet I have not had the courage to perform this procedure, which should be undertaken after animal experimentation, conducted to demonstrate that such a procedure is without danger to the respiratory and circulatory centers.

CLINICAL AND TECHNICAL OBSERVATIONS DURING SUBARACHNOID IRRIGATION

(1) There is clinical evidence from subarachnoid irrigations that during this initial stage of meningitis the process is limited. *Proof:* In two cases of meningitis it was not possible to irrigate from the infected area above the ear into the occipito-atloid region; showing that the primary area infected was walled off from the general cerebrospinal fluid circulatory system.

(2) The large amount of fluid which can be passed experimentally through the subarachnoid spaces of normal animals (from a few hundred to over 1,000 c.c. in one hour, or from 50 to 500 c.c. in 30 minutes in meningitis of from 2 to 4 hours' duration, as observed by Weed and Wegeforth)[15] is not possible in the human subject suffering from meningitis.

On the other hand, on the cadaver it is possible to irrigate fluid rather freely from a hole drilled almost anywhere in the skull out through the atloido-occipital region. Clinically, in cases of meningitis that involve the tempero-sphenoidal region, it is possible to irrigate from the frontal region and out through the basal cisterna needle. The discharge from the cisterna cerebellomedullaris occurs in rapid drops, about 60 per minute; but it is impossible to wash from the infected region into the basal cisterna, probably because the infected area is closed off by an exudate which completely occludes it.[16]

(3) In a case of meningitis, an occipito-atloid puncture made before the dura over the infected area was incised caused the whole dura to become flaccid; consequently, as the aim is to liberate as much of the infected fluid as possible, it is advisable to nick the dura over the infected area in the tempero-sphenoidal or cerebellar regions, before evacuating the fluid from the basal cisterna for irrigation. As soon as the brain fills the small opening, however, the fluid for the cerebello-medullary cisterna should be evacuated to allow of the enlargement of the dural opening and the passage of a flat spatula without injury to the cerebral cortex. I have not found it possible to enter the basal cisterna from an incision of the dura, over the tegmen.

(4) In one case of meningitis a lumbar puncture liberated no fluid, but an occipito-atloid puncture freed a large quantity. On starting subarachnoid irrigations from the frontal region, fluid flowed from the lumbar puncture needle, showing that "dry tap" is possible, even with an increase of cerebrospinal fluid in the cranium.

(5) In a case in which a second subarachnoid irrigation was performed, very little fluid escaped from the occipito-atloid puncture, but the introduction of a puncture needle liberated a moderate amount of the fluid, demonstrating that an exudation may fill and obliterate the basal cisterna without involving the subarachnoid spaces of the spinal cord.

(6) During a second subarachnoid irrigation, a free outflow occurred from the lumbar needle, accompanied by but a few drops from the basal cisterna. This at first occasioned some doubt as to whether the occipito-atloid needle had really entered the cisterna cerebellomedullaris. However the injection into the occipito-atloid needle of 10 c.c. of meningococcic serum by gravity was immediately followed by an increase of the flow from the needle in the lumbar region; showing that there may occur an occlusion by an exudate between the vertex and the base, without affecting the pathways from either the cortex to the lumbar area, or the basal to the lumbar region.

(7) There is a degree of pressure at which the fluid will flow freely from the outlet needle in the occipito-atloid region unless it be obstructed by the exudate. This point, in my experience, is generally about two and one-half feet above the patient. This degree of elevation should never be used, as anatomical considerations and autopsy findings have demonstrated that in the human subject any elevation of the inflow reservoir above one and one-half feet may cause a distention of the subdural and subarachnoid spaces with accompanying hemorrhage from the veins traversing them.

Anatomically, the communications between the meshes of the subarachnoid trabeculæ are so small that any effort to cause a continuous stream from the outlet needle in the cerebello-medullary cisterna must result in trauma to the subarachnoid spaces or distension of the subdural space. Consequently it is better to drill several intact holes than to try to irrigate freely from one.

Clinical Observations Regarding the Cerebrospinal Fluid During Subarachnoid Irrigation: In one case, the day following the irrigation, the first tube of fluid drawn from the lumbar region contained 4,000 cells, the second tube 2,000 cells. It would appear, then, as if the cells had a tendency to fall to the bottom of the cord, where they may form a thick exudate, in chronic meningitis, much in the same way that purulent exudate frequently settles by gravity in the posterior horns of the lateral ventricles and at autopsy gives the appearance of localized abscess in one or both posterior horns, depending upon the continued position of the patient on his back or side.

In a case of meningitis, the primary lumbar puncture showed only 300 cells with microörganisms. At the time of the second irrigation, several days later, the fluid obtained from the occipito-atloid puncture was sterile. As serum had been injected into the spinal cord, this would appear to throw suspicion on the efficacy of a foreign serum in controlling bacterial infection. The subarachnoid irrigation had apparently removed the microörganisms from the basal cisterna, although this may have been more apparent than real.

CONCLUSIONS

(1) From a surgical standpoint acute suppurative meningitis of otitic origin should be divided into (a) an initial primary stage, in which the infection is limited to the subarachnoid space in the neighborhood of the primary focus of infection. Operative treatment in this stage offers some prospect of recovery, during which stage, and frequently for a considerable period, this inflammatory process involves chiefly the basal cisterna. And into (b) a terminal stage, in which bacteria have invaded the whole cerebrospinal fluid system. Any surgical treatment is now almost uniformly ineffectual.

(2) Suppurative meningitis is not necessarily associated with a high cell count and with microörganisms in the fluid form from the lumbar region. Jenkins has demonstrated that microörganisms in the cranial subarachnoid spaces may be associated with a clear sterile fluid with a cell count of but 48 from the lumbar region, and I have obtained sterile fluid from the basal cisterna, while the fluid from the lumbar region contained microörganisms. Consequently, we should not wait for the presence of microörganisms or a high cell count in the cerebrospinal fluid before making a diagnosis of meningitis.

(3) In suppurative meningitis any attempt at continuous drainage of the cerebrospinal fluid circulatory system is physiologically illogical and mechanically impossible.

(4) The term subarachnoid irrigation in meningitis is a misnomer What is accomplished by the subarachnoid irrigation is not the washing away of infection from the cerebrospinal fluid system, but the removal of an altered toxic cerebrospinal fluid from the parts of the system which are not directly infected, and its replacement by a fluid of the same temperature and a similar consistency as the normal cerebrospinal fluid, the altered and toxic fluid being forced out by pressure from behind. (This is a purely theoretical statement. I have no experimental proof of the same.)

(5) Subarachnoid irrigation to be effectual must be instituted at an early stage in meningitis. It promises most in those cases in which there is reason to believe that the patient is suffering principally from cerebral toxemia.

(6) Subarachnoid irrigation is still in the experimental stage. I believe that modifications in the technic to enable the basal cisterna to be irrigated are pathologically indicated.

(7) Subarachnoid irrigation is a highly technichal procedure, requiring at least four specially trained operators; consequently, all cases of suppurative meningitis should be delegated to a special surgical service, as should all intradural operations. Only by frequent team work can the proper procedure be promptly, efficiently and safely performed.

In this paper I wish to make public acknowledgment of the valuable assistance in the performance of postmortems and tissue and fluid examinations to Drs. Fred Sutton, Harrison S. Marland, A. R. Casilli, Asher Yaguda, and Miss Marjory Patterson; to my associate, Dr. John Bissett, for perfecting an apparatus to keep the irrigating fluid at an even temperature, and to my associate, Dr. Brayton Failing.

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DISCUSSION

DR. JAMES A. BABBITT, (PHILADELPHIA, PA.)

It is not fair to open a discussion with an apology. I feel it is a very great honor to be associated in the discussion of one of the pioneers in the work, who has just presented his paper. I am frank to admit that I came here to discuss one paper and am discussing another, because I was unable to get any information which would be of help to me in preparing this discussion.

Fifteen or twenty years ago we felt that many of us had reached the solution of a very profound alteration in the nasopharyngeal duct by the proposed sudden avulsion of the maxillary duct, changing in one fell swoop the high dental arch. Perhaps 10 years ago the work by Cushing, Frazier and others made us feel that the great problem of relief from cerebrospinal fluid tension had also been solved. Here we are today in a confusing array of new facts which would require an hour's contemplation even to permit discussion. Several things, however, seem pertinent. First, we are dealing with a disturbed balance. We are dealing with a complication in the relations of the blood stream to the sinus infection. It seems to me that it is not the problem of the special anatomy of the ear and the ear surroundings; it is not a problem of the general anatomy or of the little canals which run into the arachnoid area; it is altogether a problem of the blood stream infection and the immunity produced by it. It is not only a problem of carbohydrates and the liberation of the toxic products or of histologic changes producing sudden metabolic results which cause fatality, but also is a problem involving all the structures in combination and an analysis of the circulation. We have only part way reached the goal in each of these cases. Bacteriology itself is only a science of 40 or 50 years. This problem seems to be one which requires very intensive advance in pathology and bacteriology and I should just like to ask whether the situation in regard to anaphylaxis and whether the immunity situation in the blood are not undeveloped important problems in this matter. We all feel that many of the fatalities we have had could have been avoided. We are on the threshold of obtaining the means to do this. It seems to me that our speaker has presented a distinct advance, mostly because of his kaleidoscopic changes from year to year, and he gives us greater courage to continue in our efforts for the relief of this disease. We have to-day and in the past year learned the importance of early and quick interference, in spite of symptoms of very vague character. We have proceeded beyond the conclusive decision as to cisternal drainage and believe that within the next decade we will have the mortality in meningitis very largely reduced and this will be in a great measure due to the results of the investigation presented to us to-day.

DR. GEO. W. MACKENZIE (Philadelphia, Pa.): Dr. Eagleton is to be complimented on the quality of his paper. His remarks are original and though he may change his opinion now and then (an evidence of a healthy mind), at least he may be expected to give us something new. In one point he raised to-day, I take him to mean, that in combined drainage with lavage, he goes from the inside route outward rather than from the outside inward. I believe that is original with him and it looks like a logical plan of procedure in these desperate cases.

In his series of cases, I do not recall his having included the two cases which I reported ten or twelve years ago of cured suppurative meningitis. I should like to refer to them and tell why the results were favorable. One was a colored man who had been hit on the back of the head with a shovel by a fellow worker, with resulting temporal bone fracture. A week or two later, he developed mastoid empyema and meningitis, for which I was called in to see the case. This patient also had a facial paralysis, the infection evidently having gone through a tear in the dura. On removing the fragments of bone I noticed that there was a considerable cloudy cerebrospinal fluid. The leptomeningeal spaces drained for many days, requiring redressing twice a day. The patient made very marked improvement and within two days he had returned to consciousness, and the paralysis on the opposite had cleared up very materially. This patient recovered after several weeks from every symptom, including the paralysis of the extra-ocular process.

The second case was that of a woman who had a chronic middle ear abscess with complicating labyrinthine suppuration. The patient did very well for a short time and then developed erysipelas, followed by cerebral symptoms which progressed to a typical form of meningitis. No further operation was attempted. I did not attempt further drainage. The modiolus had been exposed at the time of the operation, and the tiny spaces about it had been shut off by exudate. Janson condemned this procedure years ago, in operating on the labyrinth, for fear of resulting meningitis. This theory, however, has been disproved since. When the opening was made in the case I mention, the drainage immediately was most favorable.

There is another point I wish to make, and that is that the toxemia has less to do with the fatal termination than increased intracranial pressure. For instance, in cases of tuberculous meningitis, we find that there are not enough of the bacterial toxins present to play any serious part.

About nystagmus, it should be recalled that in meningitis the direction frequently changes as often as three or four times in a single day.

DR. JOHN F. CULP (Harrisburg, Pa.): I have a great deal of respect for anyone who knows about the pathologic changes going on inside the skull. I should like to cite a very unfortunate case which occurred last month in my practice, and should like Dr. Eagleton to explain to me how this man could go around for days with this very serious disease and finally collapse and die. The patient was a veteran of the late war and was sent to me for treatment for earache. He had moderate congestion of the right membrane and slight congestion of the other, due to a severe cold. I gave him treatment and told him to come back the next day. Five days later I was telephoned that this man was in his home, fifty miles away, and wanted medicine to relieve his earache, which had gotten worse in the meantime. Examination the next day showed an abscess of the middle ear and some tenderness over the mastoid area. There was no swelling over the bone; temperature 99 2/5. The drum membrane was incised under local anesthesia, and he was asked to stay in the hospital, but refused. This was on Saturday. He came to see me the next Monday, but as there were a number of people in the office, he said he could not wait to see me, and that anyway he had no pain. I told him to come to see me not more than two days later. I did not see him until five or six days later, and then only three hours before he died. During the interval he had had severe headache, but he had no other symptoms and so had not reported. He had had a convulsion and been taken to the hospital on the medical service, where I saw him a few hours before he died.

Postmortem revealed the mastoid process full of pus. Thrombosis of the lateral sinus was present, extending down into the internal jugular vein, with suppurative meningitis at the base of the brain. He had been going about for days without any marked symptoms. I am satisfied that had he entered the hospital, we could have investigated and found some symptoms which would have given some clue to his condition, and an opportunity to operate.

Dr. Eagleton (in closing): Dr. Babbit spoke of anaphylaxis; a great deal has been done about this. In a previous communication (Eagleton: "Operative Treatment of Suppurative Meningitis," Laryngoscope, January, 1922) I called attention to the case of a medical officer with the following history: Eighteen months before entering the service he had had a mastoid associated with an extradural abscess, following by local meningitis. The ear healed and he did well for 18 months. He then entered medical service and while there was given typhoid vaccine and had a profound reaction. While still suffering, he caught a cold and had a running ear from the same side on which he had had the mastoid 18 months before. On examination I told him to return home, and I was called to Morristown to see him the next day. He had a pneumococcic meningitis, from which he promptly died. There is no doubt in my mind that the vaccine caused a recrudescence of the former meningitis, by bringing into activity microörganisms latent in the meninges, which on account of the vaccine caused a general meningitis.

I have seen a large number of cases of recurrence of local inflammations such as uveitis and orchitis follow typhoid injections. The same thing can be caused experimentally, and so we can say that a man who has had meningitis and is injected with any other serum, if he has other complications such as a running ear, is apt to die. I have reported three cases, showing that we must look at them not only from a bacteriologic viewpoint but also from the profound chemical change which occurs.

Dr. Mackenzie pointed out exactly what I think is the proper treatment. He did not get drainage in his case. He stopped off the tube and let out the infected fluid which surrounded it. It is a matter of the removal of highly toxic fluid which is infected, and then afterward washing away the fluid so that the cells can function. I have seen cases of infection into the subdural space.

You can have great infection and nothing but headache to show for it. Unless it is relieved and the fluid evacuated; ultimately the patients get meningitis and die. Many cases walk around with infection of the cerebrospinal fluid, with few symptoms, and then die suddenly.

THE LONGEVITY OF PLATES AND OTHER FOREIGN BODIES IN THE TREATMENT OF FRACTURES OF LONG BONES*

MOSES BEHREND, M.D.

PHILADELPHIA, PA.

Several years ago, when the wave of enthusiasm for autogenous bone grafts swept the profession, metal plates and nails or other foreign materials were looked upon with disdain and the general opinion was that we had at last developed a technic that would finally displace all metal appliances. It was soon realized, howvere, that the time consumed to acquire and apply this special technic sacrificed many patients. All surgeons were not cabinet makers in applying their principles to the human frame. Gradually the technic was acquired. There began to filter through, however, many unsuccessful cases treated by means of the bone graft. It then became evident that not every case of fracture in poor primary position was suitable for an autogenous bone graft. The pendulum again began to swing towards the use of the metal plate for the fixation of bones.

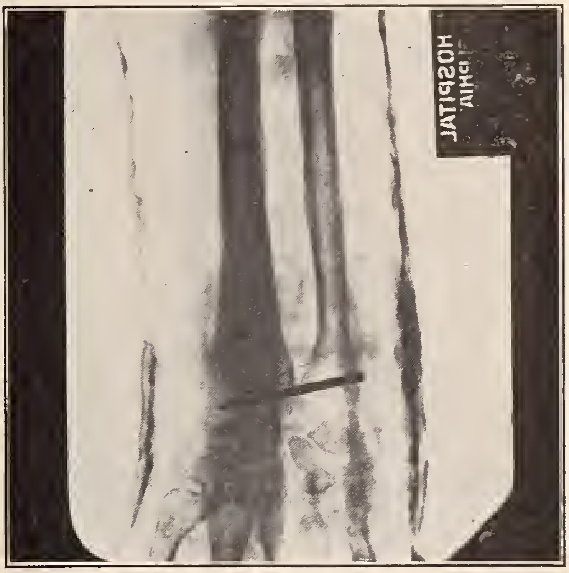

Fig. 1.—An ordinary wire nail in place six years. A case of habitual dislocation of the ulna.

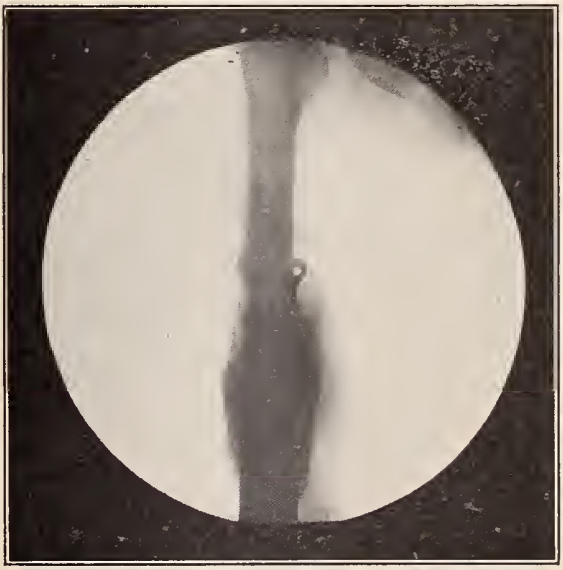

Fig. 2.—Right femur. (See Fig. 3, left femur). Simultaneous fracture. Sherman plate in position nearly five years. Patient walks perfectly.

It is not my purpose to belittle or even discourage the use of autogenous bone grafts, because there exists a tremendous field of usefulness for this kind of surgery. A definite plan must be outlined in the treatment of fractures. If such a plan is fully visualized it will be a very simple matter to decide the kind of fixation or the kind of material necessary for the retention of the fragments in position.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

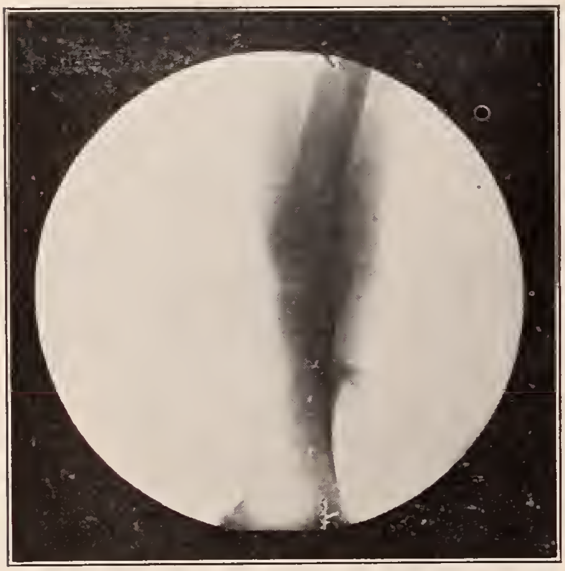

Fig. 3. (See Fig. 2, right femur). Lambotte plate in left femur nearly five years.

When a metallic substance is used to retain the bony fragments the natural question arises: How long will we be able to leave the foreign body in position? This varies to a great degree with the kind of fracture we encounter, whether simple or compound, or whether infection has resulted following operation. In all simple fractures, where it is possible to keep perfect alignment with the aid of a metal plate, it is not necessary to remove it unless irritation of the part follows. If infection supervenes, the metal substance must invariably be removed.

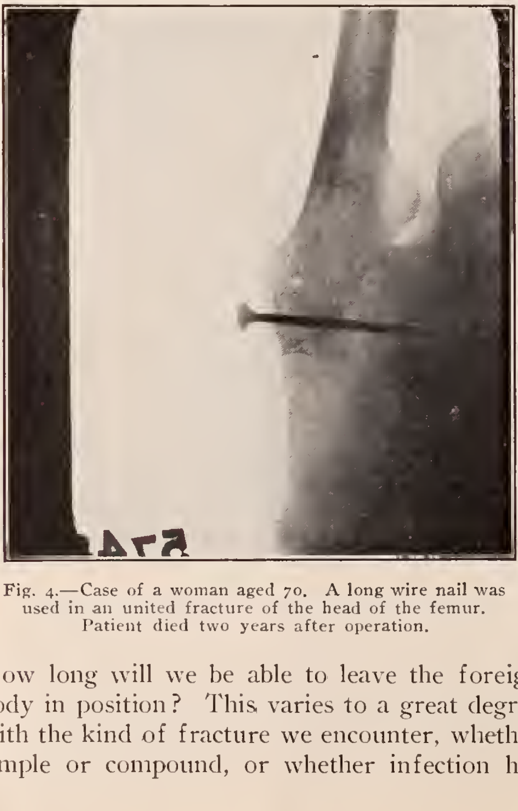

Fig. 4.—Case of a woman aged 70. A long wire nail was used in an united fracture of the head of the femur. Patient died two years after operation.

There is no question that metallic substances may remain in situ indefinitely without causing the slightest inconvenience. A few illustrative cases will suffice to demonstrate the tolerance of tissues towards the materials made of metal.

Permit me to digress, in the presentation of the first case which was reported before this section of the society in 1916. The case was one of habitual dislocation of the ulna. He was operated on for this condition by means of a wire nail which is still in position and causes no irritation. Until a few weeks ago the patient's occupation was that of chauffeur. (Fig. 1.)

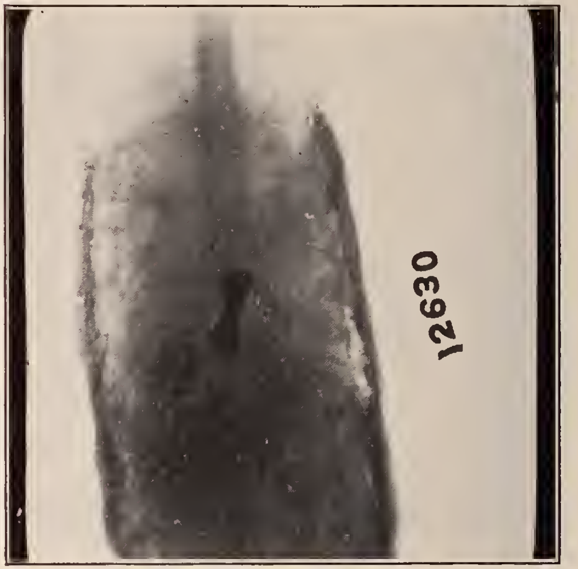

Fig. 5.—A small plate at lower end of the humerus still in position three years after operation.

A case of decided interest is that of a man now fifty-three years of age, who four and a half years ago was struck by an automobile, fracturing both femurs. Inability to keep the fragments in position necessitated an open operation on both bones simultaneously. A Sherman plate was used on the right femur, a Lambotte on the left. The plates are still in position, the patient being able to walk perfectly. (Figs. 2 and 3.)

Nails are sometimes useful in ununited fractures of the head of the femur. They are especially indicated in old people who cannot stand the prolonged operation necessitated by the use of an autogenous bone peg. Figure 4 shows an ordinary wire nail used to assist in the repair of an old ununited fracture of the head of the femur. The operation, performed under nitrous oxid gas, lasted only a few minutes. The patient was able to use the leg a few weeks after the operation, which was performed in February, 1918.

In children it is not always necessary or advisable to use metal substances, though many cases present themselves where one is unable to procure the proper alignment. Figure 5 illustrates a case of fracture of the lower end of the humerus. Here it was necessary to use a small Lane plate to keep the ends in position. Lane points out that when a plate is necessary in growing bone, these plates should be removed as soon as union is complete. The plate in Figure 5 has been in position for nearly three years with perfect function; also there has been normal growth as compared with the other arm.

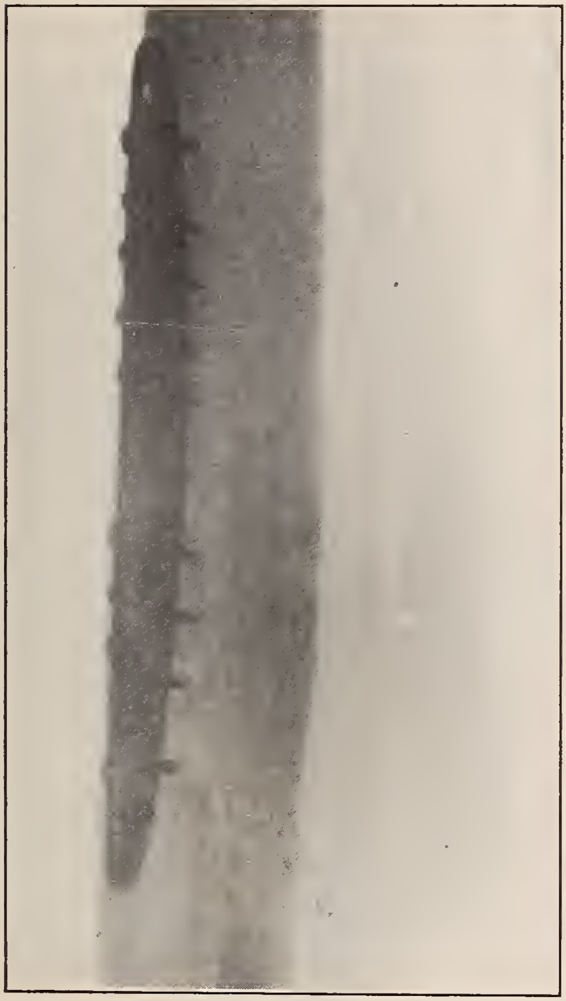

Fig. 6.—Illustration of a Lambotte plate in position seven years. Perfect use of leg.

The Lambotte plate is a popular one for use in fractures of the humerus and femur, because it fits well the convexity of these bones. Figure 6 shows a plate of this character still in good position after seven years. The patient was fourteen years old when operated upon. He is a chauffeur, attending to the necessary duties of his calling.

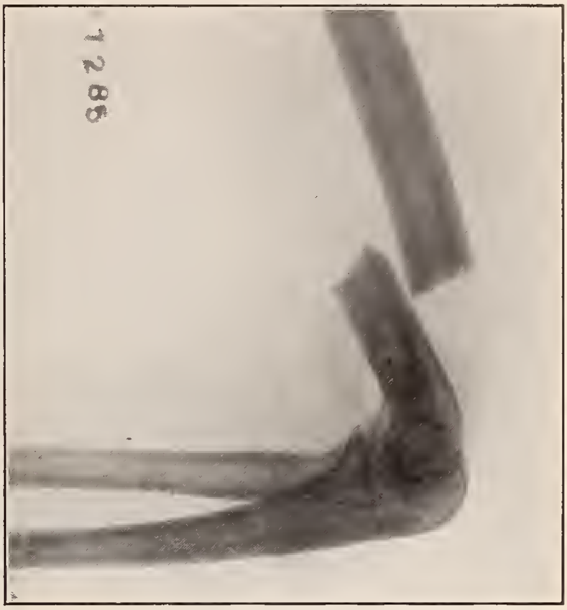

Fig. 7.—An impossible fracture to reduce by closed methods on account of the interposition of muscles revealed at the time of operation.

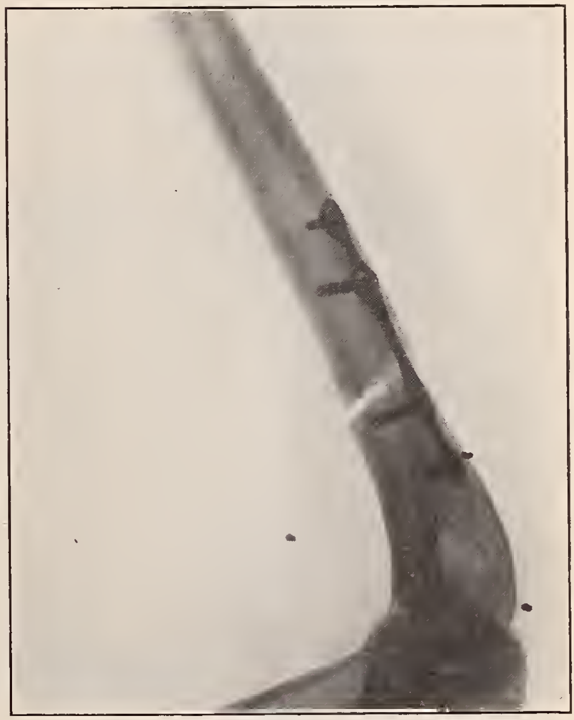

Fig. 8.—Reduction acomplished and maintained by means of a plate. In position seven months. Patient returned to occupation of automobile mechanic.

The necessity for using metal appliances for fractures of the upper extremity does not arise as frequently as for those of the lower extremity. However, when we cannot get the proper position essential for good function, the surgeon should not hesitate to perform an open operation and use some method of fixation. The x-ray plate (Fig. 7) shows the position before operation. The open operation revealed the impossibility of reduction by closed methods. A plate was used and a perfect result was obtained. (Fig. 8.)

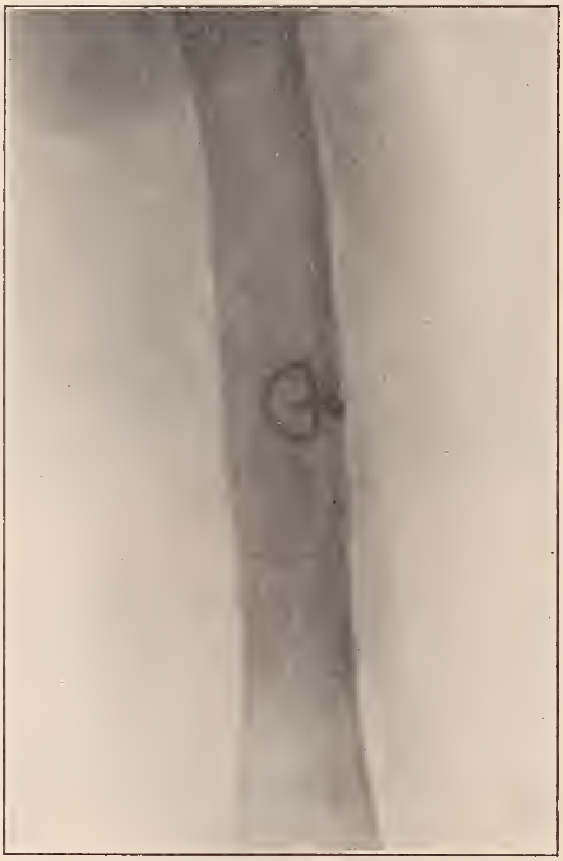
Fig. 9.—Silver wire retained three years after operation. Case of a child who goes to school every day. A fine functional result.

Figure 9 illustrates the use of silver wire occasionally employed in children. About three years ago two children were brought to the hospital with fractures of the femur which could not be held in proper alignment. Silver wire was used in both cases. In one child we obtained a fine functional and anatomical result; in the other infection ensued, followed by a long convalescence and consequently a poor result. The wire is still in position (Fig. 9), while in the latter case the wire was removed a few weeks after the operation.

At times we are compelled to remove plates in those we have operated on before they even leave the hospital. Figure 10 shows the result in a patient in whom the plate was removed eight weeks after operation, the operation having been performed four years previously.

Surgeons have not all agreed that these metallic substances may remain indefinitely but rather approve of removing them as soon as their period of usefulness has been fulfilled, in other words when firm union has taken place. But as stated before, we see no good reason for removing these foreign bodies so long as no irritation has resulted.

In reviewing the literature we find there is no specific paper on this subject. Lane in his book mentions the fact that plates need not be removed, that when it becomes necessary to remove them it is due to poor technic. Eddington, on the other hand, removes plates within three or four weeks. He emphasizes the fact that in the use of Lane plates perfect alignment is essential to obtain a good result. A. H. Harrigan also makes a powerful plea for the efficiency of plates in the treatment of fractures of long bones. However, I cannot agree with all he says. He believes that in some instances plates should be removed.

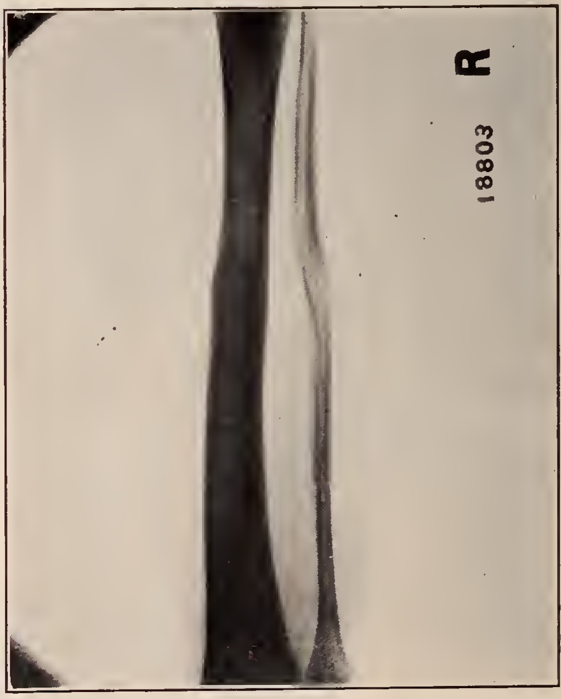

Fig. 10.—Illustrates a case in which the plate was removed after its period of usefulness had been fulfilled; eight weeks after operation.

We must at all times be conservative in the treatment of fractures because we are dealing with structures which are easily infected. In case an open operation is deemed essential, we must have in mind certain fundamental and logical procedures. In a recent simple or compound fracture in good position that can be maintained by means of splints or other means of fixation, it would be folly to perform an open operation. But where perfect or nearly perfect alignment cannot be attained, some form of open operation is indicated. This ought not to be done immediately after the fracture has been received, but one should wait at least from ten days to two weeks following the incidence of the fracture, the object being to allow the lymph spaces to close, thus reducing somewhat the predisposition of this type of case to infection.

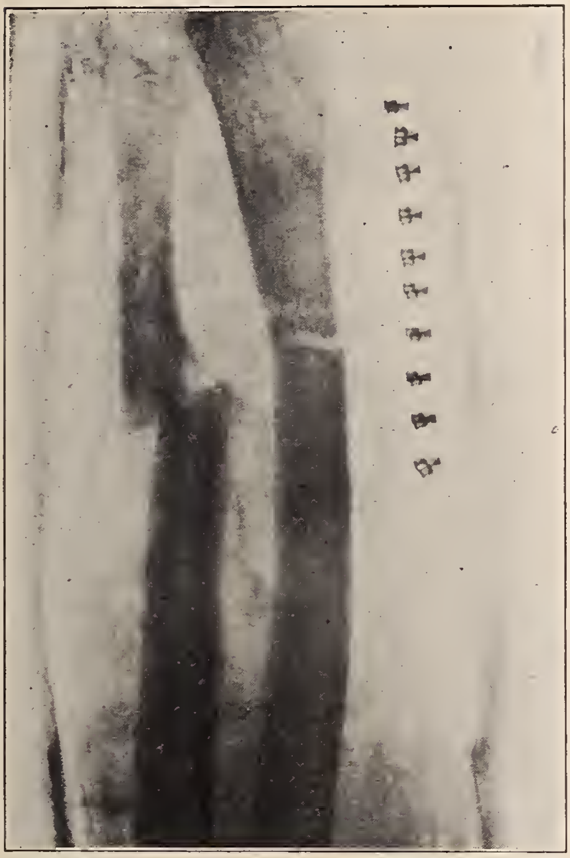

Fig. 11.—Reduction of fracture of both bones of the forearm and retention of fragments without the use of any foreign material. Michel clips used to close the incision in the skin.

It may not be necessary to use any means of fixation after the bones have been exposed, a simple reduction sufficing, as in the case of some forearm fractures. (Fig. 11.) In recent fractures where good apposition cannot be maintained and it becomes necessary to use a foreign body, our best results have been derived from the use of metal plates or nails.

No one ever failed to be impressed by the uncanny manner in which the late John B. Murphy would drive a nail here and there, when necessary, in order to obtain the desired position of the ends of bones.

In case of failure of union after the use of metallic substances, it becomes incumbent on us to use autogenous bone grafts as advocated and outlined by Albee. This method has never failed to give us good results provided no infection ensued. (Figs. 12 and 13.)

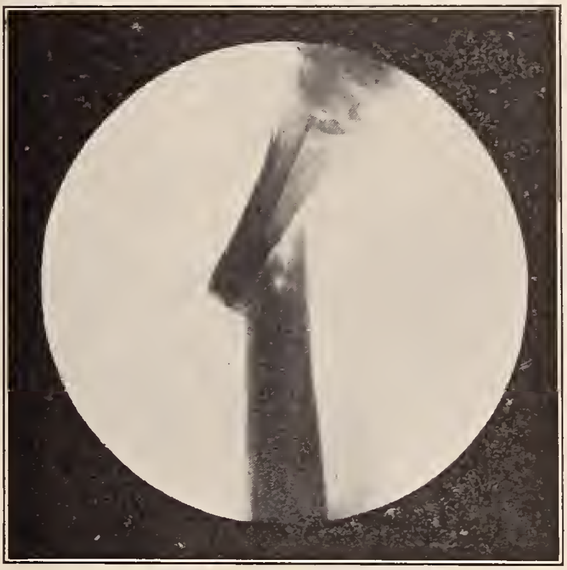

Fig.—12. A compound fracture healed in a vicious position. See Fig. 13.

In compound fractures where good apposition cannot be maintained, it may be necessary to use some method of fixation. It has been our experience, however, that the best interests of the patient will be served if we keep away from all forms of metallic substance. Compound

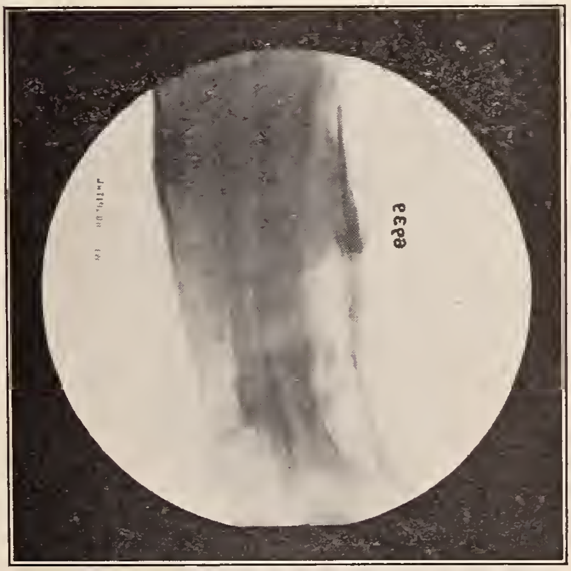

Fig. 13.—Reduction maintained by means of an Albee bone graft.

fractures almost invariably become infected, and the metal substance causes more irritation and must eventually be removed.

While this paper deals primarily with the ability of the tissues to resist the presence of metallic substances, the method employed follows the principles laid down by Lane under the caption of the "no contact method." The technic is thoroughly understood by all, but strange as it may seem, some surgeons (including orthopedic surgeons) transgress from the well-established and well-tried technic. It has been our experience that whenever we did not strictly adhere to the principles of the no contact method, infection ensued, with the natural result of poor position of the fragments and a prolonged convalescence.

Our interpretation of the no contact method consists in never touching the broken ends of bones with the gloved hand. Instead we use long bone forceps. The sponges are picked from their original packages by assistants by means of forceps. The nurse never touches them. After an instrument is once used it is placed in an electric sterilizer near at hand.

Summing up the foregoing: We are forced to admit that metal plates, nails or other foreign materials may remain in situ indefinitely under favorable circumstances.

That we never fail to remove these materials whenever necessary.

That fractures should be treated by closed methods whenever possible, but that we never hesitate to perform an open operation when indicated.

That when an operation is performed the "no contact" method must be strictly and conscientiously followed.

I wish to thank Dr. Benjamin Lipshutz for the review of the literature.

1738 Pine Street.

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DISCUSSION

Dr. W. Estell Lee (Philadelphia, Pa.): I talked with Dr. Behrend about this discussion before and he agrees with me that he wants me to discuss it rather than approve of it and I have taken one statement in his paper which I think probably will be misunderstood. For. Dr. Behrend in his practice I think it is perfectly justifiable, but as a general practice I think it gives a text for a definite discussion; that is, when it is impossible to obtain perfect or nearly perfect alignment of the bone, open operation is justifiable. After the necessary experience and the development of the exacting technic for the operative treatment of fractures demanded, most surgeons have been surprised by obtaining results similar to those shown to us by Dr. Behrend. Contrary to the early teaching of Lane it is the rare exception instead of the rule in our work to find it necessary to remove plates or bands. But this longevity of foreign bodies in bones is not only dependent upon the perfection of the technic, as Dr. Behrend has emphasized, but even more upon the selection of the cases in which they should be employed. The surgical technic, the equipment, the mechanical principles involved, are so generally known at the present time they admit of no discussion, but the latter phase of the subject Dr. Behrend has not emphasized—and very fortunately for us, as he leaves little else to discuss.

Many surgeons are convinced that with skeletal traction, occasionally combined with open reduction, better results can be obtained than with any form of internal fixation. Though we are not prepared to make such a sweeping statement at the present time, as our skill in the application of skeletal traction develops, we are rapidly discarding most of the so-called indications for internal fixation. As contra-indications to the use of metallic foreign bodies for the internal fixation of fractures we are convinced that infection and nonunion of bones should never be treated in this way. The danger in the presence of infection is now generally accepted. In ununited fractures we consider bone transplantation the rational procedure, and we are more conservative with the fractures in children than Dr. Behrend suggests in his paper. Children are not good risks for such major surgical procedures, while the growing bones will correct marked deformities when subjected to their required function.

By this time you may suspect that instead of advocating open operation and internal fixation as a routine procedure, the enthusiasm for this procedure has not justified the increased mortality resulting from its indiscriminate practice. We may be pessimistic because it is the failures that come to us, but after the recent removal of a Lane plate from a three-year-old child, which had been applied six months previously, we consider it to be the method of last resort. The surgical skill, judgment and operating equipment demanded for the *safe* practice of this method is greater than any other type of special surgery and cannot be obtained by every surgeon.

We feel that it is full time a warning should be sounded against the routine treatment of fractures by this major surgical procedure. That unusual results may be obtained we do not deny, but the average improvement in the functional results that have followed from a fracture of the middle third of the femur, and an ankylosed knee, following the introduction of an intramedullary bone peg in a fracture of the middle third of the femur in an adult, will illustrate these sins of commission.

To recapitulate: We agree with Dr. Behrend that the open reduction and internal fixation of fracture may be followed by brilliant results, but we feel it is an unnecesary and unjustifiable surgical procedure except as a last resort.

Dr. William L. Estes (Bethlehem, Pa.): I feel almost as if my period of treating fractures had ended, but for some recent studies which we made for the American Surgical Association—I happened to be the chairman of the committee. In the study of several thousand cases of fractures, the records of which were sent from all over the United States and Canada, it was interesting to note that of the open method something like 65% resulted in good functional result, whereas with the nonoperative method 75% resulted in good functional use of the part afterward. In other words, the investigation showed that though the open method gave better anatomical results the closed nonoperative method was followed, in the hands of the general surgeon, by the better functional result; and that of these several thousand cases, the time of disability was very considerably increased by the open method. In other words, take as illustration, the femur. The nonoperative method gave an average of 8.2 months disability from the time the fracture occurred until the man was able to go to work; whereas, with the open method is required nine months plus. As to the safety of open methods, the reports show that out of the cases studied, only about 1 in 65 was infected. The reports, however, as a rule, came from men thoroughly competent to do these operations. It is generally conceded they must be done by a man thoroughly equipped to do the work and who has had considerable experience in this line of work. One in 65 of these cases is certainly a very low rate of sepsis.

Dr. Behrend spoke of waiting at least two weeks for operation in cases of fracture which are to be operated upon. Our investigation showed that if the operation was delayed beyond ten days (eight was the average) the time of disability was considerably prolonged, and that though the anatomic results were good in many cases the functional results were bad, or not as good, the reason being that the union was very slow. For many months it was imperfect, and as a result, the individual beginning to bear weight, had bending or distortion at the seat of union. The ultimate result, examined months after the operation, showed not as good functional result as in the case of the man not operated upon.

I have never been able to understand why surgeons have found proper internal fixation apparatus irritating in compound fractures and why they were always condemned, or nearly always condemned. They are the very kind of fractures I feel should have some direct fixation upon the fragments, and in my hands and the hands of my confreres there has never been any reason to fear the application of the direct splint to the bone. It may be the direct fixation plate we use has some special virtue or quality. In 1886 I began to use a little metallic plate of Wessel silver, which is an alloy of silver, copper and zinc, I think. It was shown in experiments at Johns Hopkins that these metals which form the alloy of which the plate is made, have an inhibitory effect on colonies of bacteria, and I am sure from hundreds of cases in which it has been used that it has never seemed to produce irritation. If one is careful of his debridement and getting the wound clean, the plate does not encourage nor provoke suppuration. I believe, therefore, contrary to the dictum, that the direct fixation operations are especially indicated in compound fractures where one can control the after treatment.

DR. CHARLES F. MITCHELL (Philadelphia, Pa.): I think it a most dangerous thing to ask a surgeon to speak on the subject of fractures, because if once he starts it is difficult to stop him.

What Dr. Estes has said about the use of metal plates, bone-grafts, etc., is very true; but he did not, to my mind, lay emphasis enough on the ability of the surgeon using them. Good results in this line of work depend absolutely on the dexterity and experience of the operator. Casual experience in hospitals where the surgeon only gets a few cases, possibly not over a dozen or half that number in a year, does not tend to make a very finished surgeon in this branch of surgical work. In 1915 I had the pleasure of seeing Tuffier operate on a badly comminuted fracture of the lower end of the tibia. The lower fragment was very small, and the lower end of the upper fragment tapered to a point not larger than a lead pencil. The ends of the bone were brought in apposition and held in place by a small metal plate, the hands of the operator never touching the wound, and a plaster cast applied, in the French way—making a large pad of plaster, moulding it to the part, and cutting away the excess portion. The whole operation did not take over fifteen minutes I know, had I been doing the same operation, it would have required three times as long, and in comparison to his work mine would be likened to that of a blacksmith, while his to the work of a delicate watchmaker.

DR. CHARLES E. THOMSON (Scranton, Pa.): I went down to the scientific exhibit and brought up these specimens in order to emphasize an exception I want to take to Dr. Lee's remark that the old fractures are not good cases, or should not be nailed. Here is a very old case and it has been reported many, many times, but this man's fracture was three months old before it was nailed and yet you will see from the specimen the very excellent bony union we obtained. I have another case in which 18 months elapsed after the fracture before the metallic fixation was put in, and I showed that man at the Saratoga meeting, had him parade up and down the hall, a year after the fixation. So that if Dr. Lee intended that for an absolute rule I should like to note this exception to it: that we do get good results from metallic fixation in old cases.

Now, if I may be permitted to say a word about fixation generally: I think it is a pretty poor thing on the whole and should only be used as an extreme last resort; and what I mean by that is after repeated attempts at reduction without a cutting operation.

I also want to say a word in commendation of Dr. Estes' statement about waiting two weeks. When the essayist brought up that point I could not help thinking of a remark that Dr. Deaver made one time in connection with making leucocyte counts in cases of appendicitis. He said he could not conceive a man cold blooded enough to wait for a blood count in a case of acute appendicitis. Now why should you wait for two weeks, because you all know the agonies that a patient suffers from an unreduced fracture? I do not believe it is good practice, notwithstanding that there may be something in his point about avoiding infection while waiting two weeks, but I think it is an absolutely barbarous practice. Dr. Estes assures us that it prolongs the period of disability, and we all know that he is talking from hardpan experience. If an effort has repeatedly been made and failed, and it takes a man two weeks to make up his mind whether he should cut on this fracture or not, then there might be some justification for it.

DR. HARVEY C. MASLAND (Philadelphia, Pa.): I can testify, from personal observation of Dr. Behrend's work, as to his technique and conscientious care in operating, and I am sure that his results will compare with the best. That, however, is not sufficient justification in the light of what Dr. Estes brings to us, gathered countrywide, as to the use of metal plates. If I quote Dr. Behrend correctly, he uses these plates only where he does not get satisfactory replacement by other means. Undoubtedly the commonly used methods of reduction and splinting leave some open operations almost a necessity.

A year ago I presented to the State Society a new method of splinting and reducing acute fractures. In that paper, published in the Journal, I made the statement that in all acute fractures, treated early, the limb could be brought to the normal length. I felt the majority of the men then present did not believe me. After another year's experience I reaffirm that statement and add that, with the study and application of my methods, fracture deformity should be practically a thing of the past. The bone can be replaced, and full restoration of function depends only on the regenerative abilities of the parts.

All my splints require a rigid anchorage above and below the fracture sufficient to bear and evenly distribute all the pressure that may be necessary. Projecting from these anchorages are splint arms that overlap and are slidable over each other in the fracture area. The splint parts are fitted to each patient and bring into mechanical harmony the normal relations of the buried bones and the surface topography of the parts.

Turnbuckle extension is attached and after complete reduction is effected the overlapping arms are clamped together with an encircling sleeve clamp. Lateral twist or lengthwise shortening of the parts subsequently is impossible. Convalescence is surprisingly comfortable.

Dr. E. C. Murphy (Philadelphia, Pa.): I wish to speak of fracture of the neck of the femur, with nail driven through. Last year I reported 20 cases of fracture of neck of femur treated by the abduction method and during the time of studying these cases I went into the x-ray pictures thoroughly. Most of these cases were of at least two years' duration. Some of them went to four years. Now I found, in all these patients of 65 years, or over, that in the best results obtained, a dense fibrous union occurred and there was no osseous union whatsoever. That was the general rule in those patients over 65 years. Now, I cannot see any advantage in driving a nail through the trochanter into the head of the femur when there is no hope of a bony union. There is no regeneration of bone and certainly the internal part of that nail will become loosened. I think there is too much danger of infection in these patients, who are usually in a very weakened condition and very liable to infection, or pneumonia, and are not good risks for this operation.

Dr. Behrend (in closing): We all agree that we must be conservative in the treatment of fractures, as I stated in my paper. I was rather surprised to hear Dr. Lee speak about the lack of technic. I do not believe he meant to infer that he did not possess the amount of technic and skill required to perform the operation of open reduction for fractures and the placing of the metal plate to maintain the fracture in position; but we seem to gather that there is apparenly a lack of technic either on his part or on the part of those he has seen do this work. There is no question that there are many unnecessary operations being performed for fractured bones. On the other hand, you must all admit that in all instances where nonunion has resulted, it is absolutely essential to do the open operation and use metal plates or a bone graft. We rarely use metal plates in cases of nonunion. They are usually failures in these cases and the greatest success has always been derived from the use of bone graft in such cases.

We are always pleased to hear Dr. Estes talk about fractures, because in this state we look upon him as the leader in the treatment of fractures. He rarely says anything about the subject without teaching us something. I still, however, feel that we ought to plate ten days to two weeks after the accident. In my paper I do not say specifically two weeks. It does not make very much difference whether we plate eight or ten days or two weeks after the fracture has been received. It is a benefit to wait a certain reasonable time, because of the large amount of blood around these fractures, and the many lymphatics that have been opened render the open operation of bones safer if we wait a certain length of time after fracture.

I was very glad to hear Dr. Estes' experience in the fixation of compound fractures. After having heard him I will try this again, and use the same fixation in the treatment of compound fractures. However, it has been my experience that it has not been very gratifying to use this method. The plates all had to be removed.

Dr. Masland's ingenious method of replacing these fractures cannot be accomplished by all. I have seen his apparatus and I am sure that it will assist us to be more conservative in the treatment of fractures and perform less open operations.

There is no question about it that time is a great factor in performing open operations, and I agree perfectly with Dr. Mitchell that entirely too much time is taken in performing the open operation by those who have not had much experience with it. It ought not to take more than fifteen to thirty minutes to put a bone plate in position. Those who take longer should not do it, because they have not mastered the technic, or the use of the instruments that are necessary to perform the open operation for fractured bones.

FRACTURES NEAR THE ANKLE

With Special Reference to Fracture of the Posterior Margin of the Lower End of the Tibia*

W. L. ESTES, Jr., M.D.

BETHLEHEM, PA.

In recent American medical literature, with the exception of textbook narration and an occasional reference to the disability likely to arise from an incompletely reduced "Pott's Fracture," there has been a great dearth of discussion of fractures near the ankle. Ashhurst's masterful review,[1] Speed's report,[2] and a brief paper by Dr. T. Turner Thomas,[3] are striking exceptions. I have, therefore, ventured to present a brief consideration of ankle fractures today.

There has been a tendency in recent years, surviving from the days of the great Irish surgeon, roughly to designate any fracture of the lower third of the leg and involving the ankle a "Pott's Fracture." Study of radiographs of these fractures has demonstrated varied and numerous underlying lesions but we have been slow to realize the great advance in knowledge of the actual fractures this has yielded, and have strangely clung to the old teachings.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

There should be the widest possible adoption of an accurate and exact grouping, classification and nomenclature for fractures about the ankle and abolition of obsolete terms.

Fractures near the ankle may be divided into: 1, supramalleolar fractures; 2, separation of the lower epiphysis of tibia and fibula; 3, fractures involving the ankle joint—anatomically, fractures of the malleoli and lower ends of the tibia and fibula. It is to these latter—true ankle joint fractures—that attention is especially invited.

Classification of ankle joint fractures hangs largely on the study and proper comprehension of the mechanism by which they are produced. The indirect violence which usually causes them, increases the normal ankle movement—abduction, external rotation, adduction, flexion and extension—until fracture results. The heterogeneous lines of fracture in tibia and lower fibula remain a thorough enigma, until this conception of their origin is applied. There are, then: 1, abduction fractures; 2, external rotation fractures; 3, adduction fractures; 4, flexion fractures; 5, extension fractures.

Fracture may also occur at the ankle by compression, and, very rarely, a direct injury. Though Roberts and Kelly[4] and, to a less extent, Stimson[5] and Speed[6] have indicated this division, it remained for Ashhurst to detail a classification. His description has been very closely followed in this discussion.

ABDUCTION FRACTURES: 1. When the foot is forced in abduction, the first structure to give way is the internal malleolus, as a rule torn asunder near its tip or center. Less commonly, the internal lateral ligament is ruptured, the malleolus remaining intact. 2. If the force or strain continues, the inferior tibiofibular ligament will be ruptured, permitting diastasis of the tibia and fibula, or, if the ligament holds, the external malleolus will be fractured. More commonly, the anterior portion ruptures and a fracture of the fibula above the malleolus, usually at or near the surgical neck, results from bending. When the fibula finally gives way, diastasis, as a result of rupture of the tibiofibular ligament, occurs and lateral deviation of the astragulus and external malleolus is permitted. With diastasis and rupture of the inferior tibiofibular ligament, there may be fracture of the "anterior tubercle of the tibia" (Ashhurst), i. e., the external articulating surface of the tibia.

Abduction fractures are, then: First degree—fracture of the internal malleolus alone, usually of the tip or through its middle. Second degree—fracture of the internal malleolus, or rupture of the internal lateral ligament, with fracture of the external malleolus or shaft of the fibula, with or without diastasis of the inferior tibiofibular articulation. Third degree—fracture of the internal malleolus, or rupture of the internal ligament, with fracture of the external malleolus or shaft of the fibula, with or without diastasis of the inferior tibiofibular articulation, or fracture of the external surface of the tibia, and lateral displacement or dislocation of the astragulus. True Pott's fracture would fall into this group.

EXTERNAL ROTATION FRACTURES: When forced beyond normal limits, external rotation is more prone to cause fracture than internal rotation because the range of normal internal rotation is greater. External rotation causes: 1. An oblique fracture of the lower end of the fibula from above downward and forward, which usually extends to the external malleolus below the tibiofibular articulation. No displacement. 2. If carried further, external rotation will next fracture the internal malleolus, usually the tip, or rupture the internal lateral ligament. 3. There may be diastasis of the lower tibiofibular articulation or fracture of the external articulating surface of the tibio-anterior tubercle. If this occurs, it takes place at the time of fracture of the fibula, and the fracture of the fibula may then be high—the middle or upper third. 4. Fracture of the posterior margin of the tibia. 5. Posterior dislocation of the astragulus.

External rotation fractures then, may be: First degree—oblique fracture of the lower end of the fibula. Second degree—oblique fracture of the fibula with fracture of the internal malleolus or rupture of the internal lateral ligament with or without fracture of the posterior margin of the tibia or external surface of the tibia. Second degree—variation—fracture of the fibula, high or atypical, with diastasis of the tibiofibular joint or fracture of the external articulating surface of the tibia. Third degree—Second degree fracture plus posterior dislocation of the astragulus.

ADDUCTION FRACTURES: The first lesion to be produced by forced adduction is fracture of the external malleolus—transverse and below the level of the lower end of the tibia. If carried further, the internal malleolus is fractured longitudinally and near its base. This may even be a long split up through the tibial shaft.

Adduction fractures may, therefore, be: First degree—fracture of the external malleolus—transverse. Second degree—fracture of the internal malleolus—longitudinally near the base, and fracture of the external malleolus.

INTERNAL ROTATION FRACTURES have not been recognized as separate from adduction fractures. A certain amount of internal rotation probably accompanies a certain number of adduction fractures.

Extension Fractures: A simon pure extension fracture is exceedingly rare, unless isolated fracture of the posterior margin of the tibia be included. Some extension is present in many external rotation fractures in which posterior marginal fracture with posterior dislocation occurs. However, fracture is not necessary for posterior dislocation.

Flexion Fractures are likewise exceedingly rare. Isolated fractures of the anterior margin of the tibia are probably the only recorded instances of fracture by flexion.

Fractures by Compression may be either: 1. Marginal tibial fractures. 2. "T" or "Y" fractures.

Abduction and *external rotation fractures* are by far the most common lesions. *Adduction fractures* are infrequent. *Flexion, extension* and *compression fractures* are rare. *Direct injury fractures* are exceedingly uncommon. Ashhurst finds that external rotation causes 61% of ankle fractures; abduction, 21%, adduction, 13%, and the rarer types of fractures but 5%.

Fracture of the Posterior Margin on the Lower End of the Tibia, or "the posterior malleolus" as it has been called, seems to have aroused but sporadic interest in America, though apparently recognized elsewhere, notably in France. It was noted as early as 1822 by Cooper, by Earle in 1828, and by Adams in 1835.

It is far more common in association with other lesions than as an isolated fracture. Ashhurst found it present in 19% of all ankle fractures, Chaput in 30%, Destot in 8.5%, Quenu in 9.3%, Sears in 18.6%, Speed in 10% (Ashhurst). Ashhurst states it may occur in external rotation fractures with oblique fracture of the lower end of the fibula, in abduction fractures, or in single diastasis of the tibia and fibula with linear fracture of the external articulating surface of the tibio-anterior tubercle, or with a single fracture of the internal malleolus.

It favors posterior dislocation of the ankle. Continuation of the force after fracture has been produced causes displacement and dislocation, and recent reports by Quenu,[7] Ashhurst and Thomas assert that it is present practically invariably in posterior dislocation; that is, in very rare instances only has posterior dislocation of the ankle taken place without it.

Isolated Fracture of the Lower Posterio-Tibial Margin: As an isolated fracture it is comparatively rare. The first case was reported by Meissner[8] in 1908. Tanton[9] found but twenty cases reported up to 1916, and I have been able to discover but seven cases since then—three of Sear's,[10] one of Ashhurst's, one of Metzger's[11] and two of my own—twenty-seven in all. It is probably of more frequent occurrence than reports indicate.

Etiology and Pathology: As accounts of the accidents demonstrate, it is caused by a force from below upward with the foot in plantar flexion or extension: Destot,[12] a quick stop while playing tennis; Quenu, a fall upon the foot in extension; Meissner, a fall from a ladder; Metzger, jumping and landing upon the foot extended.

Traction by the inferior-posterior tibiofibular ligament may be a factor and cause simply a fracture of the posterior tibial tubercle—a linear splitting off of the tubercle, not involving the joint. Frank marginal fracture always extends to the joint surface, and may include but a small portion of the tip or involve the entire posterior-inferior tibial surface.

The fracture is usually one to two cm. from the posterior edge but always behind the weight-bearing central axis. (Metzger.) There is no displacement except, rarely, a slight tipping of the fragment.

The symptoms are variable and hardly to be considered characteristic or pathognomonic, so that the lesion may easily pass for a simple sprain. There is usually pain in the ankle and inability to walk or bear weight.

The following signs may also be present: 1. Swelling about malleoli and ankle. 2. Ecchymosis behind the ankle, beginning at the internal malleolus (but this is inconstant). 3. The foot may be held more or less in plantar flexion-equino position. (This was quite marked in Meissner's and Metzger's cases, and in two of Quenu's.) 4. Voluntary movement from this position is impossible or very painful. Passive motion is limited and painful. 5. There is pain on pressure over the posterior malleolar gutter but no crepitus.

Diagnosis: Unless the position of the foot or local tenderness arouses suspicion, this fracture may easily, and probably often does, pass for a sprain. Positive diagnosis can only be made by a radiograph—lateral stereoscopics are probably the best, though the usual lateral and anteroposterior views are quite satisfactory. It is *plainly* visible on a lateral, but only dimly, even on an excellent anteroposterior plate, as a deltoid shadow over the lower end of the tibia.

Prognosis: The results in isolated fracture have been uniformly good. In complicated fracture, especially with posterior dislocation, if the fracture be unrecognized, serious permanent disability will result.

Treatment: If the foot cannot be brought in dorsal flexion to a right angle or beyond, an anesthetic should be given. The foot is placed in the over-corrected position and a plaster cast applied to maintain it. This may be removed after three weeks, when massage and passive motion is begun. Weight-bearing should be cautiously permitted after four or five weeks. Recovery is usually complete in six or seven weeks.

Case 1: A college student, aged 19, while playing basketball, jumped in the air for the ball and came down upon his left foot. In spite of immediate severe pain in the ankle, he resumed playing for four or five minutes. He was able to walk with a limp but could not continue playing.

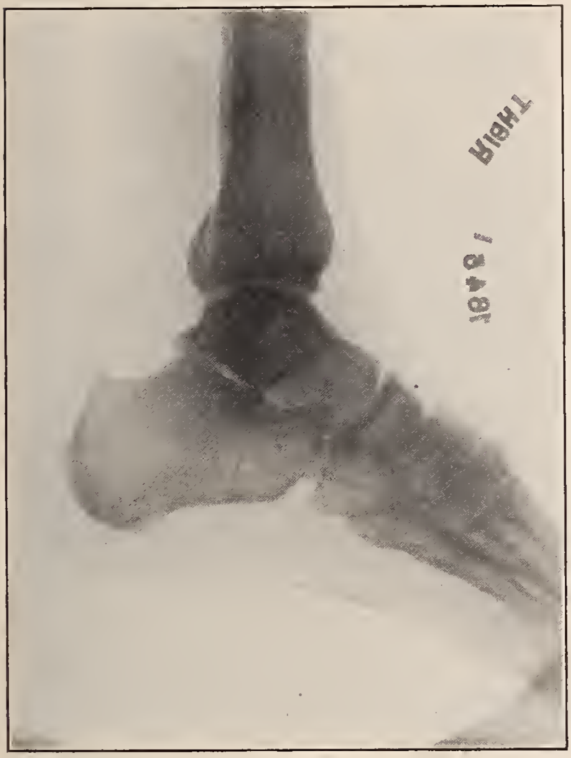

Fig.—1.

The following day he reported to me, walking into the office with the aid of a cane. There was a marked limp. The left foot was in very slight plantar flexion with slight swelling about both malleoli, especially the internal. There was slight tenderness behind and median to the internal malleolus; none elsewhere. No ecchymosis. Voluntary motion was markedly limited —practically nil. Passive motion was only one-half of normal, and quite painful.

Because of the local tenderness, a radiograph was advised, and revealed a fracture of the posterior surface of the lower margin of the tibia, extending barely to the joint—"probably a sprain fracture of the posterior tubercle." (Fig. 1.)

The foot was placed in right-angled flexion and a cast applied from the toes to the lower third of the leg. This was removed in two and a half weeks. The recovery was uneventful.

Final result—complete return to normal function.

Comment: Fall upon the foot in extension; local tenderness behind the interior malleolus; sprain fracture of the posterior tubercle; cast applied for two and a half weeks. Complete recovery.

Case 2: The following case is reported through the courtesy of Dr. W. D. Chase.

Mrs. C. E. M., aged 31 years, while walking on a slippery, icy pavement, fell, her ankle twisting under her. She was unable to walk without assistance and any weight-bearing was extremely painful. There was swelling about both malleoli. No local tenderness was observed and no tendency to plantar flexion. The radiograph showed splitting off of the entire posterior margin of the tibia; no displacement; no other fracture. (Fig. 2.) A cast was applied for about four weeks. Crutches were used for three months. There is still some stiffness in the ankle, and occasional pain. Dorsal flexion is somewhat limited; plantar flexion is normal.

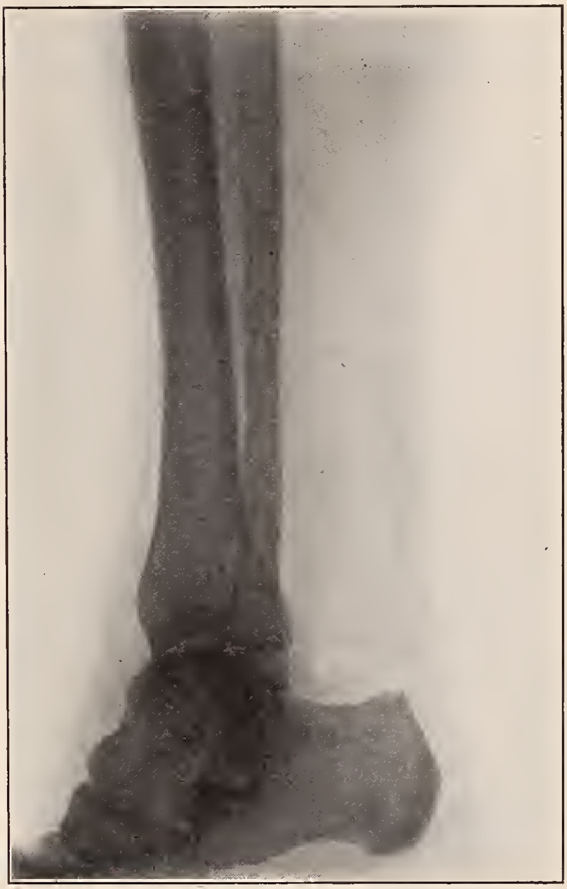

Fig.—2.

Comment: A fall upon the foot; direction of the fracturing force not certain; a true posterior marginal fracture; cast applied for four weeks; prolonged convalescence; slight permanent disability.

CONCLUSIONS

1. Fracture of the posterior margin of the tibia is a fracture that deserves wider recogni-

tion and is a serious and usual complication of posterior dislocation of the ankle.

2. It may occur with abduction and external rotation fractures of the second degree.

3. As an isolated lesion, it is probably an extension-compression fracture and is of more frequent occurrence than reports indicate. There is little or no displacement of the fragment. Following recognition and simple immobilization, recovery is usually prompt and complete. In one case here reported, slight permanent disability persists.

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DISCUSSION

Dr. Charles F. Mitchell (Philadelphia, Pa.): I fully agree with everything Dr. Estes has said in his most interesting and instructive paper on "Fractures Near the Ankle," and I think we should thank the writer for bringing to our notice a correct classification of fractures in this region. As was mentioned, "Potts" is the common name applied to any and every fracture occuring in this locality, and I imagine we one and all have been guilty of falsely using this name in describing some of our cases. The paper has so fully described the various fractures, the mechanics of their production, etc., that there is nothing to add along this line. I imagine, however, that fracture of the posterior malleolus is much more common than the percentage of reported cases leads us to believe, and also the failure to have x-ray pictures of every simple injury of the ankle-joint has greatly lessened the number of cases which should come under this heading. Injuries, not only about the ankle, but involving any joint, should always be x-rayed. In case of posterior dislocation where reduction is difficult, the cutting of the tendo achillis will greatly facilitate in the reduction.

To digress somewhat from the subject of this paper, I do not think the subject of fractures receives enough attention in our medical schools. Our interns of today know everything about gastro-enterostomies, brain tumors, etc., but hardly know the name of a single splint or how to pad one.

A careful record should be kept in all fracture cases and this has been made quite simple if one uses the fracture record blank, as suggested and adopted by the American Surgical Association, of which Dr. Estes, Sr., is really the father.

Dr. W. Estell Lee (Philadelphia, Pa.): This is one on Dr. Dorrance. He told me that I would not be allowed to discuss this paper, so I did not prepare any discussion. I had the privilege of reading Dr. Estes' paper and particularly the classification. The fractures at ankles have interested me, especially in the dispensary work, in the end results; in other words, in the duration of temporary and proportional permanent disability. I think if some of the chiefs of services in general hospitals could follow their end results in injuries about the ankle they would be very much surprised at their unsatisfactory results. The disability, the limitation of motion due to fibrosis, and finally to bony ankylosis and the last, or most crippling, of toe drop. All of them, except the latter, we know how to correct and I think more or less routinely (that is, early motion of ankle, the padding or lifting of inner edge of shoe or heel, to overcome abduction) but toe drop is, I think, frequently overlooked. My first impression of toe drop was with the French surgeons in 1915. Whether the French soldiers acquired toe drop because they did not want to go back to the trenches I do not know, but an enormous proportion went around the streets of Paris with toe drop. It was appalling. Dr. Powers showed how simple it is to correct by tenotomy of the tendo achillis.

Soon after my return I had my first catastrophe in consultation on a patient who had toe drop from what I now know was a fracture of the posterior lip of the tibia, and she had a permanent disability. With that in mind my next opportunity was the wife of a lawyer. She had very much more marked deformity posterior than any of the pictures Dr. Estes showed, due to an external rotation fracture of the fibula, and she had at least 50% dislocation which I could not replace under an anesthetic. Tenotomy of the tendo achillis overcame our difficulties. It has been called attention to by a number of surgeons, but I think that the average surgeon realizes the importance of this.

Dr. Eugene C. Murphy (Philadelphia, Pa.): In the first part of his paper Dr. Estes makes a plea for correct diagnosis, nomenclature and proper classification of fractures involving the ankle joint. This is very interesting to me, because in the last three years I have been making a study of fractures involving the hip joint and the ankle joint and have been collecting the cases. I found that, in collecting fractures involving the neck of the femur, I had 34 cases of so-called intracapsular fracture according to the diagnosis in hospital and according to the outside sheet. When I got out the x-ray plates and checked up with the records I dropped down to 20 so-called intracapsular fractures.

Now the ankle joint is worse. Pott's fracture seems to be the easiest way of discharging a patient in a hurry that has had a fractured ankle. It does not mean anything. For some time I have paid no attention to the diagnosis of Pott's fracture, but would go through the charts and look at the x-ray report and would find in this report a correct diagnosis. The interne in his hurry to discharge his patient puts it down and that is what goes on file.

We have instituted a method of overcoming that. Let each man in the institution check up his own histories. Now this seemed to be a disagreeable task when we started it and the men said they could not spend their time in the office checking up histories, but I find that the most of them do not spend more than an hour a week and the histories have certainly improved. There is no one knows more about the patient than the one who is treating him. It used to be left to the chief resident, and most times he knows less than the interne about the patient. Besides the man who has charge of the patient and treats him, he O.K.'s the record. That is all very well, but we have a committee who are up in nomenclature, who also check up that history before it is filed away and in that way you will be able to get out statistics that are really accurate.

I have never seen, so far, an isolated case of fracture of the posterior portion of the tibia, but I do find in the last seven years that we had three cases of fracture of the posterior surface of the tibia, but it was associated with posterior dislocation of the ankle joint. I think that even at that there are probably many we miss. The old time way of taking an anteroposterior view and a lateral view of the ankle joint, or any joint, I do not think is satisfactory. Stereoscopic picture of the joint is the ideal way to study a joint. You have the whole thing before you and can see the depth, or any condition that would show the faintest trace of fracture, which would help you a whole lot in treatment of that case. I know we would have less omissions and more correct diagnoses in fracture of a joint in any part of the body if we insist on a stereoscopic x-ray picture.

Dr. T. Turner Thomas (Philadelphia, Pa.): I wish to express approval of Dr. Estes' classification of these fractures according to the fracturing force. Muscle contraction will hold the fragments in the position determined by the fracturing force, but in my opinion they will not determine the typical character of the deformity. The influence of the fracturing force can be best seen at the ankle and the wrist where the force of the fall on the hand is so obvious. But the further up the limb we go, upper or lower, the more difficult it is to trace the influence of the fracturing force.

My special effort has been to show that the usual fracturing force results from the fall. The most common consequence at the ankle is abduction. I believe that external rotation almost invariably accompanies abduction here. My limited opportunities for studying x-ray illustrations of the common fractures of both bones of the leg and shaft of the femur suggest to me that the abduction deformity is most common in them as at the ankle. For example, in the very frequent fractures of both bones of the leg about the junction of the lower and middle thirds, the lower fragments are not usually displaced backward, which is commonly taught and explained by the pull of the powerful gastrocnemius and soleus; but are usually displaced externally, probably from the same force as the abduction fractures at the ankle.

But even at the ankle we are only beginning to take full advantage of our knowledge. If abduction produced the fracture, then the best way to correct the deformity is to adduct the foot and hold it in this position, and if it took a severe force to produce the deformity it will likewise require a strong force to correct it. It will not suffice to place the foot in a fracture box and tilt the foot over with a soft pad. The principle of the Dupuytren's splint for Pott's fracture is correct if we use force enough. I prefer to put the patient fully under ether and powerfully force the foot into overcorrection and hold it in this position with a plaster cast. According to my experience we are much more likely to use too little than too much force in correction. This applies, however, only to fractures of the ankle and not to fractures of the shafts of the tibia and fibula further up the leg. Overcorrection is too easy there.

There is only one way to determine the degree of correction accomplished by these manœuvres, i. e., by a comparison of the x-ray pictures taken before and after the correction. Often the fracturing force was not great enough to produce deformity, so that efforts at correction accomplish nothing.

To attempt correction without a general anesthetic will often accomplish practically nothing, because the patient will defeat the effort by his own muscle contraction. The correction is usually very difficult with the aid of the anesthetic and impossible without it. When it is accomplished, if the reducing force is relaxed, the fragments will easily return to their deformed position, due to the muscle contraction. This is a fruitful field for discussion. Should we or do we dare to use plaster casts? I have used them many times, but they must be watched.

Dr. Estes calls attention to the fact that in only very rare instances does posterior dislocation of the ankle occur without posterior marginal fracture of the tibia, but that more commonly this fracture takes place without the dislocation. This means, in my opinion, that the first effect of the fracturing force is the fracture, which may be incomplete or complete or may be accompanied by displacement according to the degree of force applied.

Dr. Jonathan M. Wainwright (Scranton, Pa.): I think we all ought to thank Dr. Estes and Dr. Behrend for still having enough of the pioneer spirit to present fracture papers to the State Society and we ought also to thank the Section officers for letting them slip in. To the general profession, by and large, in this state, there is no subject, I think, that is more important than the treatment of fractures. We have our industries, with enormous numbers of accidents, and besides that we have the highways, which are perhaps more important at the present time. You all know it is more dangerous to cross a highway in Pennsylvania than it was to go across the submarine zone during the Great War. There were 5,600,000 soldiers transported across the English Channel, without losing one. Let 5,600,000 men amble across the Lackawanna Trail and see what happens.

The whole subject is important, especially fractures around the ankle. Corporations and relatives, institutions, almshouses and so on, are paying an enormous amount in this state for disability on account of fractures of the ankle. There are many men in poorhouses because they had a broken ankle and the result has been such that they cannot work any more. The state suffers considerable loss of money because their ankle joints are partially or completely disabled; so that there is nothing that we can be taught, like Dr. Estes has taught us to-day on the ankle fractures, that is not of the greatest importance, and I am sure that we have all been well repaid in having ankle joint fractures brought to our attention again in such an interesting way.

As Dr. Murphy says, there is not much more to say about it. I think it is too bad to let any discussion on fractures end without emphasizing the importance of the physical therapy afterwards. I think a physiotherapy department or a gymnasium is just as important a part of every large general hospital in a big city as an operating room, or any other part of a hospital. Two or three years ago we established one here, and after we had been running it a year we found we had reduced the disability in this particular type of fracture by just about 30 days, saving one full month. Now on the average we are getting our fractured ankles back to work in three months. That sounds like a long time, but for us up in these regions, where our patients have to get back to work in a coal mine, or hop around on a freight train, we feel three months is a gratifying period of disability. We feel that we have a very complete gymnasium in the Moses

Taylor Hospital and we should be very glad to have any of the members see it.

DR. DONALD GUTHRIE (Sayre, Pa.): A point which I considered of great value was to overcome toe drop by tenotomy in fracture of both bones of the lower leg.

DR. ESTES (in closing): I took the liberty of speaking on the classification of fractures of the ankle—perhaps a little difficult to listen to—because, with a proper understanding of the classification and cause of fracture, it seems to me the treatment would become far more intelligent. When you understand the actual lesions, satisfactory treatment can be so much better undertaken, and x-ray plates more readily interpreted. As brought out by one of the discussers, deformities as a result of fracture must particularly be properly corrected, even the slight displacement of the astragulus, which may be only discernible by x-ray.

I was glad to hear the point brought out about division of the tendo achillis. In Dr. Thomas' report, which deals largely with fracture of the posterior margin of the tibia in connection with posterior dislocation of the ankle, he cites one instance in which three attempts were necessary before complete reduction could be obtained. I do not think he finally resorted to division of the tendo achillis. I did not appreciate the special value of this procedure until emphasized by Dr. Lee and Dr. Mitchell.

The point Dr. Murphy stressed, on the importance of stereoscopic pictures in ankle fractures can well be reiterated. I shall not feel confident that we have thorough knowledge of these fractures until we have studied them stereoscopically.

I shall be very glad to see Dr. Wainwright's mechanotherapeutic department, as I realize the necessity of proper after-treatment in fractures and the great benefit of well-conducted mechanotherapeutics.

MYOCLONIC ATTACKS*

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Irritative phenomena of a clonic type affecting isolated muscle and muscle-groups are frequently encountered in diseases of the nervous system. Medical literature contains descriptions of many forms, together with the attempts of their authors to rear up new syndromes because of minor clinical differences.

A number of these hyperkineses, although differing in origin and pathogenesis and therefore in chronicity and progress, have been grouped under the general name of myoclonus because of a clinical similarity. This name, as its Greek origin testifies, signifies a severe muscular contraction, a muscle tumult or muscle shock. The contractions in true myoclonus are unrhythmical and intermittent, non-synchronous, generally electric-like in their quickness, involve muscle groups not under voluntary control and very often muscles which are not used coördinately. No or little movement should, therefore, accompany the attacks. As with every clinical sign, its association with other symptoms, as also its chronicity, severity, and scope in involvement of muscles, has given rise to varied descriptive divergencies and different interpretations.

Friedreich's original description of paramyoclonus multiplex tended to these differences, in that he described multiple myoclonic twitchings in a tuberculous carpenter, which the patient attributed to a violent fright five years before, at the bursting of a circular saw, and which were "cured" by a few galvanizations. The intimation was very plain that his patient, Ludwig Berlein, had a neurosis caused by a fright and cured by suggestion, so that by a natural way, the literature of that time recognized in the myoclonia, syndromes of an hysteriform nature.

There grew up a fairly large literature upon this basis, the writers shading their nomenclature into the tics and choreas on one side and towards the myospasms and tremors on the other. The only association which seemed to link them together was an unknown and supposedly a so-called neurotic origin. Some years later, however, another type of myoclonus was described by Unverricht. He called attention to the association of myoclonus and epilepsy in members of the same household, without the former syndrome being handed down to a succeeding generation. He was followed by several writers (Clark and Prout in the U. S.) who called attention to the association of various spasmodic tics with the epilepsies and spoke of epileptoid myoclonus. In this connection, one can refer to Tourette's disease, the chronic choreas of the degenerate, perhaps, to Collin's tic neurosis and also to the myoclonic nystagmus of Lenoble-Aubineau as being somewhat similar types of syndromes.

Leading us farther afield, Lundborg followed Unverricht with descriptions of a familial type of myoclonus allied to epilepsy with which there later developed dementia. He concludes, because dementia occurred in his myoclonic patients, that myoclonus is "a disease which is closely allied to dementia præcox, especially the catatonic forms." He rears up, therefore, another disease type, namely, myoclonic dementia. It was also Lundborg, in another of his articles, who attempted to show a relationship between myoclonia and myotonia (Thomsen's disease). Because these types of myoclonus would not fit in with a neurotic or hysteriform pathogenesis, there arose the idea of a metabolic origin or endogenous toxemia as a cause of these myoclonia. But the tendency remained to consider all types as something *sui generis,* assuming always that there was no organic disease of the cerebrospinal axis as a cause and that the myoclonus was not merely a symptom but a distinct syndrome. In fact, many, like Dana, excluded the symptomatic myoclonic attacks from any association with the myoclonia.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

This assumption I can hardly believe was ever justifiable. Perhaps the occurrence of myoclonic shocks in acute diseases of the cerebrospinal axis was not frequently observed in former years, or perhaps the fixity in conception of the origin and chronicity of myoclonus, together with the insistence that it was not associated with paralysis, pain, trophic disorders, etc., and was degenerative, led to an ignoring of acute types except in connection with hysteria. The so-called spinal epilepsy, for instance, observed after some acute spinal cord diseases, is certainly similar in manifestations to myoclonus. Although it was recognized and described years ago at about the same time as the various myoclonia were, I do not recall that it was ever associated with myoclonus. A spinal origin for myoclonus was, however, argued for by many writers. J. Ramsay Hunt, for instance, has published a classical paper advancing this opinion, in which he cites as proof the etiology in several cases—"lead intoxication (Huber), old poliomyelitis (Williamson, Walton), low grade neuritis (Biancone), sciatica (Gowers)." He speaks of those rare cases in which paramyoclonic twitchings have occurred in the course of organic disease of the cerebral cortex, but dismisses a cortical origin as the probable one for myoclonic attacks. The recent invasion of lethargic encephalitis and the frequency of myoclonic twitchings in this disease, again focused our attention upon the controversy between a spinal or a cerebral origin, inasmuch as in encephalitis both upper and lower motor neurones may be involved and, in addition, neurotic types of encephalitis have been frequently described. It has led us further away from the old functional conception and, in most instances, established a spinal origin, from the necessity of recognizing that the clinical type of a cortical involvement in irritative lesions is a synergized movement and not vermicular movements of isolated muscle masses as is found with the myoclonia. Nevertheless, the type, as found in chronic cases, without pain, without other symptoms of the lower motor neurons, and accompanied by a certain amount of mental reduction, is not explainable on a spinal basis.

The few cases of hemimyoclonus described by Bernhardt, Minkowsky, and Seeligmuller, thirty years ago, as evidence of a cerebral origin, and which Hunt considered as weighing but lightly in the balance, arouse to my mind renewed interest because of the type of myoclonus observed in lethargic encephalitis, and the unanswered question as to just what these men did observe. With myoclonus to-day such a type is rare, although myoclonus has been a common symptom—so common that it is lately regarded as a diagnostic symptom of encephalitis of the spinal type, especially diaphragmatic myoclonus with hiccough as a result.

Myoclonus is, therefore, a symptom of irritability of the motor neurones of indefinite or variable origin. Occasionally it is the only symptom. It occurs as a symptom in the course of the meningo-encephalitides, or as the chief symptom in chronic affections of obscure infectious origin. The tendency seems to be to ignore any possibility of a cerebral (cortical) origin and to regard it as a spinal manifestation. Hunt has recently again written upon this subject in order to stress the affinity of certain strains of the same infection for certain tissues of the nervous system, producing an especial clinical type of reaction. Such forms are the acute infectious myoclonus multiplex and epidemic myoclonus multiplex. Why it does not occur often in other infections of the nervous system and is so common in lethargic encephalitic patients is not, however, as yet explainable.

Myoclonus cannot be considered any more, therefore, than merely a syndrome associated with hysteria, accompanied by emotional and vasamotor symptoms, under the influence of the will, disappearing in sleep and ceasing when the patient's mind is occupied with other things than his personal conflict. Nor can we to-day agree with those who argue that it is functional, although not hysteriform, but that the hysteria follows the myoclonic movements, is caused by it, and is allied to the convulsive tics. Nor can one hardly reconcile such archaic views with the opinions of those who regard the attacks as evidence of focal infections. If we study the pages of our present textbooks we realize how much is necessary to clarify the present situation.

Many myoclonic types have been observed by me in the last twenty years. They have not in any respect differed from those cited in the literature and I shall not, therefore, take up space to describe any except a recent case of *hemimyoclonus accompanying a three months' coma* in a patient who was suffering from paretic dementia. Because this patient had following his "apoplexy" a picture which resembled those shown in lethargic encephalitis and yet clinically was paretic dementia makes his history interesting. As is shown below, the laboratory confirms this diagnosis. The description follows:

J. A. came to me several years ago for treatment of his chronic headaches. He was in active business, endowed with a brilliant mind, and given to no bad habits. At that time he had a beginning interstitial nephritis, as shown by his urine, but otherwise there were no particular findings. A blood Wassermann was made and reported as negative. Three years later, business reverses came to him and his headaches were increased and were accompanied by sleeplessness, a beginning irritability, and slight lapses of memory (Sept.-Oct., 1920). To these symptoms were added a dry cough and some loss of weight. Increased breath sounds and roughened sounds with the spoken voice were found over the right lobe.

These symptoms persisted throughout the winter. Early in the spring of 1921 he was placed under Dr. Hoover, of Cleveland, for observation, who made a diagnosis of "beginning malignancy of the mediastinal glands," because of the x-ray pictures, together with the physical findings. The patient still vigorously denied any possibility of syphilis. On his return from Cleveland, nevertheless, after further radiographs, a lumbar puncture was insisted upon and showed a four plus Wassermann, 45 cells to the field, and a paretic colloidal gold reaction. Intravenous arsphenamine injections together with mercurial inunctions cleared up his cough. The nodal lymph glands became reduced, as shown by further radiograph studies, and the hazy shadows simulating a malignant growth disappeared. But a rapid reduction in intellectual capacity took place, despite a thorough antisyphilitic treatment, consisting of intravenous medication, spinal drainage, Swift-Ellis treatments and inunctions, so that a dementia was evident, even to his family, in the summer of 1921. From that time until February, 1922, he remained an ordinary case of paresis with extreme forgetfulness and defective memory for recent events, lost in recollections of an earlier period of his life, with a depression alternating with evanescent grandiose delusions, extreme restlessnes and irritability, occasional tumultuous outburts of excitement, and with the usual physical changes found in paretic dementia.

February 13th, he fell unconscious and remained in a state of somnolency until his death on May 19, 1922, a period of over ninety days. There was at no time stertorous breathing, facial suffusion, or complete immobility. He seemed to recognize the presence of his wife and moved his limbs a little. On a few occasions his wife insisted he muttered her name, but neither a nurse or myself elicited any speech from him. Moaning sounds were, however, quite frequent. Swallowing was difficult at first, but later on he took his food regularly until the last week of this last illness. *At no time was there any paralysis.* The left pupil was smaller than the right. Neither reacted to light or accommodation at this time. The fundi were normal. Shortly after he was found unconscious, the first clonic spasms came on, involving his left face, arm and leg. These were intense contractions of the muscle masses, about eighty to the minute, persisting for the first day without cessation. They occurred largely in non-synchronous muscle masses, without movement of the entire limbs.

In the first twenty-four hours he had, with no effect upon them, 3/4 gr. of morphine, 1/5 gr. of hyoscine, two drams of potassium bromide, and one-half a dram of chloral hydrate. They became intermittent in character after this, accompanied by twitching movements in the intervals. Suddenly a violent jerking of some of the muscle-masses of his left leg would come on, or of his left arm, but rarely would they occur together. Then would ensue clonic movements of his left scalp, left facial and left neck muscles. When these occurred the patient would grow restless, moan incessantly, and his breathing would become irregular, so that the picture was quite agonizing. Occasionally there occurred clonic twitchings of his left abdominal muscles. At the height of these seizures, his eyes would turn toward the left side. Upon two occasions a slow lateral nystagmus occurred, lasting over an hour. No narcotics seemed to produce any effect. The other details in respect to symptoms and treatment are not important, except that his temperature was between 100 and 101 degrees F., for the first three days and then sank back to normal, that a lumbar puncture showed a fluid filled with fresh blood, and that his blood-pressure had dropped to 128 S—70 D.

A clinical diagnosis was made of ventricular hemorrhage, producing a hemimyoclonus with a somnolency simulating a lethargic encephalitis.

The autopsy findings were made by Dr. Henry Ray, pathologist to the Southside Hospital of Pittsburgh. No permission could be secured to obtain anything except the brain.

ANATOMICAL DIAGNOSIS

Brain: Chronic pachymeningitis interna. Intense subpial edema with cystic collections of fluid and deformity of the brain by compression. Flattening of convolutions and asymmetry. Cerebral congestion with softening. Hyperplasia of choroid plexus. Ependymitis granularis.

PROTOCOL

The body is that of a well developed white male of good musculature, but showing evidence of emaciation. Weight is about 115 pounds and length is 66 inches. The vertex of the skull shows a large area of alopecia but the facial, axillary, and pubic hairs are normal in distribution. There is no discharge from the external orifices. Left pupil is contracted and somewhat irregular; right pupil is in mid-dilation. Malar bones are quite prominent from sinking of cheeks. Neck, chest and abdomen are normal in shape and there are no visible or palpable masses. Epitrochlear and inguinal glands are definitely enlarged and firm. External genitals show no gross changes. There is no edema and rigor mortis is present. The skin of the back shows postmortem discoloration.

Tissues of the scalp are very thin and temporal muscles are somewhat atrophied. The calvarium saws through with difficulty, the concellous tissue being unusually thick and attaining in the frontal bones a thickness of 1.5 cm. The dura mater is firmly adherent to the vault and is definitely thickened, especially internally, where there are several layers discolored by old blood pigment. There is an excess of clear yellow fluid at the base.

Brain appears to be shrunken, somewhat asymmetrical and weighs 38 ounces (normal weight, 50 ounces). Piarachnoid is opaque, grayish white and edematous, and bulges, from subpial collections of clear yellow fluid which is in places encapsulated and over the left fronto-parietal region forms a cystic swelling which measures 4 cm. in diameter and produces a concavity in the cortex over the Sylvian fissure. Convolutions are generally contracted and flattened and superficial cerebral vessels are tortuous and engorged.

Section of the Brain After Formalin Fixation Over a Period of Four Weeks: It is interesting to note that the ventricles are not appreciably dilated and there is no apparent increase in cerebrospinal fluid. The choroid plexus is hyperplastic and injected and the ependyma is everywhere thickened and roughened, showing innumerable minute gray sand-like projections. The prolonged formalin fixation renders the gross detection of minute areas of softening and hemorrhage a difficult matter.

MICROSCOPICAL EXAMINATION

One hundred and ten sections were examined. Sections were taken from various regions of the cortex, the corpus callosum, caudate and lenticular nuclei, internal capsules, thalami, pons and medulla. Three sets were prepared stained with hematoxylin and eosin, Weigert-Pal and Bielshowsky-Alzheimer-Mann methods.

The piarachnoid is thickened and pial vessels show perivascular small and large round cell infiltration. Pial layers are in places separated, and the reticulum is distended with red blood corpuscles, some mononuclear cells, and old disintegrated blood pigment.

Cerebral cortex shows in places diffuse mononuclear cell infiltration, with profuse red blood corpuscle extravasations. There is a definite diminution in the number of ganglion cells, and in fact a widespread loss of nerve tissue. Betz cells show chromatolysis and ganglion cells in general are shrunken, and in places pigmented. Some of the blood vessels contain structureless amyloid-like bodies.

The sections of nerve roots show an entire lack of perivascular lymphocytic infiltration, and there is no interstitial infiltration of the nerve fibers. The important changes here are characterized by hemorrhage, degeneration and disintegration of nerve tissue.

The most profound changes are seen in the internal capsule, the lenticular nuclei, and the medulla oblongata. Here can be seen small foci of hemorrhagic infiltration, some old and others more recent.

While some places are relatively acellular from atrophy of nerve fibers with fibrous replacement, others show neuroglial proliferation. Myelin sheaths show extensive degeneration and in places large columns of undulating lines, which correspond to glia fibers, are devoid of myelin covering. In some sections the tissue is edematous, and there are seen the large granular and even vacuolated cells, often referred to as gitter cells.

Ependymal cells show granular degeneration and in places pigmentation. Sub-ependymal tissue shows scattered mononuclear cells, and blood vessels exhibit perivascular small round cell infiltration.

The choroid plexus is hyperplastic and shows a large number of pinkish concentric lamellated bodies, not unlike those seen in the psammomata.

DISCUSSION

Dr. C. C. Wholey (Pittsburgh, Pa.): As Dr. Mayer has mentioned, irritative phenomena of the neuromuscular system are frequently encountered, especially in a neurological practice. Certain of the resulting abnormal muscular movements are spoken of as the dyskinesias. They usually are on the side of hyperactivity (and include various types of tremor, fibrillary contractions and muscular spasms) but the reverse may be true, as in periodic palsy, or myasthenia. Dr. Mayer's able review of the subject of myoclonus enables us to see that this phenomenon has been very baffling with regard, both to its cause and to the part of the nervous system which is chiefly affected in particular cases. This difficulty results in part, as the doctor has intimated, from the fact that a number of myoclonic-like conditions such as tics, torticollis, etc., seem to be definitely of hysteriform origin. The mental element is the chief and often the sole etiologic agent in such cases. I think, however, that when the rich material which has been afforded us through our recent experiences with epidemic (lethargic) encephalitis has been thoroughly digested, our ideas regarding typical myoclonic reactions will be further clarified. Lethargic encephalitis furnishes a most specific example of the fact that myoclonus may be produced by organic or toxic causes. Dr. Mayer has said that in encephalitic myclonus, both the cortical and spinal motor systems are affected and that this still leaves us in doubt as to whether the cortex or spinal system is mostly to be incriminated. While both the cortex and cord may be equally affected in the general minor tremors so conspicuous in certain cases, the massive myoclonic attacks affecting certain groups of muscles seem to me to point more definitely to a spinal cause. This is particularly true if we restrict the term myoclonus to its original definition as "movements of individual muscles or portions of muscles, which are arrhythmic, not controlled by the will, and which are frequently repeated and changing in their location."* G. Marinesco (footnote Rev. Neurol., Jan., 1921) reports several cases in which the rhythmic movements of the muscles were synchronous with the respiratory movements. He explains this as a reflex phenomenon connected with the respiratory centers, and says that they do not arise in the cord as do certain true myoclonias.

This view applies to a case of encephalitis which came into my hands where there were violent, rhythmically recurring contractions of the abdominal muscles, chiefly the recti. These spasms occurred first on one side, and then on the other, but were not simultaneous. An explanation for certain of the myoclonic reactions seems to me to rest on the supposition of a spasmodic contraction of the blood vessels in the cord supplying the nerves innervating these particular muscles. A similar etiology in intermittent claudication strongly suggests this hypothesis. Where myoclonus is caused by a definite infection, such as lethargic encephalitis, there would appear to be an irritative condition affecting the anterior spinal roots, and hence the motor system, in a way similar to a posterior radiculitis affecting the posterior root zone and giving such sensory crises as occur in tabes. These sensory crises have been thought to be due to angiospasm of the vessels of the posterior cord, and similarly such spasms may cause the severe clonic reactions so typically seen in encephalitis. Spinal epilepsy has likewise been considered due to spasm of the vessels of the cord.

The brilliant work of Ramsey Hunt which elucidated the pathology of paralysis agitans, chorea and the athetoses, has not only enabled us to understand this large section of the hyperkinesias, but has shed light upon the mechanisms and pathology of this entire group of muscular pathologies.

Dr. Theodore Diller (Pittsburgh, Pa.): I have listened with interest and have been instructed by this excellent presentation of a subject which some of you might at first glance suppose to have been a rare condition, but which like many other conditions is not so rare.

Our attention is directed to this interesting subject by the frequency of the appearance of this symptom in lethargic encephalitis. We have been indebted a great deal to Ramsay Hunt for his studies. Dr. Mayer is indebted to him for his résumé, in bringing this subject before us in, I may say, a judicial fashion this morning, and it occurs to me that his position is correct in the light of our present knowledge that these things are not hysterical and they are organic. And yet my own impression is from my reading that while they are organic I believe that they may be in a chemical or nutritional sense. And I still believe that while not often hysterical in character, they may be so. I should like to ask Dr. Mayer whether he would rule hysteria out altogether. It occurs to me that there may be a likelihood of comparison between this condition and convulsions. Convulsions are due to organic diseases of various sorts. Convulsions may be due to organic disease; and convulsions may be, as we still know, functional in character.

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*Practical Med. Series, 1921, Nervous and Mental Diseases (Bassoe), page 51.

Dr. Mayer (in closing): My point of view is, that to call a symptom or syndrome hysterical, merely because we fail to find a physical basis for it, is a mistake. I tried to show how confusing this was with the hyperkineses. Hysteria ought to be a positive diagnosis; a psychic trauma, together with a distinct background of behavior and emotional anomalies, traced through the life history of the individual must be clearly in evidence.

As to myoclonia—there may be metabolic or chemical causes for such a picture. But such types are rare and their causative factors must be more plainly in evidence than they are to-day. The frequency of myoclonic attacks in the symptom-complex of encephalitis was the incentive to the citing of the case recorded in this paper, which shows myoclonic attacks together with a "sleep" of many weeks in paralytic dementia.

Dr. Wholey's conception is very original. Of course atheromatous or degenerative changes can be present like those which evoke intermittent claudication. There are many varying types of symptoms caused by the angioscleroses, but personally, I cannot include the myoclonia among them.

THE PRESENT STATUS OF ENDOCRINE THERAPY*

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Endocrinology as a special field of medicine has stimulated to an unusual degree the interest of a varied group of workers in the fundamental sciences as well as in the clinical branches. Each in his own special domain has been laboriously seeking for new light concerning the baffling problems of the internal secretions. In no other branch of medicine, perhaps, are so many lively polemics being waged to-day. We find the physiologists at odds among themselves with respect to the various hypotheses promulgated, and as a class, at times, pitted against the clinicians whom they accuse, frequently with right, of imaginative speculations and audacious therapeutic procedures. This state of affairs is due to the fact that no fixed principles have as yet been established concerning the physiology of the endocrine glands, and that almost any statement made to-day regarding their function may to-morrow require qualification.

The clinician in the midst of this chaotic state of our knowledge finds himself bewildered in any attempt to follow the scientific literature of the endocrines, or to formulate principles of therapy. Present day endocrine treatment has accordingly developed not by the extension of pure science to its application, but largely empirically by the method of trial and error. The result has been to divide clinicians, with respect to their attitude towards endocrinology, into three groups, the conservative, who endeavor patiently to follow the scientific advance, the ultra-conservative, who stand aloof or peradventure sit in the seat of the scoffer, and the ultra-enthusiasts who with boundless optimism have evolved a facile applied pseudo-endocrinology garnered largely from advertising pamphlets.

The fragmentary state of our knowledge of the incretions may be judged by the fact that after many years of painstaking investigation on the part of physiologists and biochemists only two hormones have been isolated—epinephrin and thyroxin, and at present some physiologists would deny the substantiation of epinephrin as a hormone. Despite the meagerness of established fundamentals the literature of clinical endocrinology has grown rife, and the phrase "endocrine imbalance" would appear to be superseding neurasthenia as a diagnostic blanket. Meanwhile the layman has been drawn from an intimate discussion of psycho-analysis to the more alluring topic of rejuvenation through the medium of the endocrines.

The obvious aim of any form of endocrine therapy should be to restore the patient with demonstrable endocrine dysfunction, as far as possible, to a state of normal functioning of the incretory glands. Theoretically this might be accomplished by decreasing, increasing or modifying the functional activity of these glands. In states of hyperfunctioning it would appear rational to attempt to decrease function by the excision of the hyperfunctioning gland, or by diminishing its blood supply by arterial ligation, or by radiotherapy, as has actually been accomplished in the case of the thyroid. In states of hypofunction it would be indicated to attempt to increase functional activity by transplantation of the homologous gland, or by means of a substitutive form of therapy through the administration of the gland extract or hormone. It is with the latter procedure that endocrine therapy is mainly concerned.

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

One of the obstacles which has retarded the progress of a rational organotherapy has been the variability in the preparation of the gland products and the variability of dosage employed. There is an urgent need for standardization in the methods of manufacturing and of assaying the extracts as well as for a determination of a more exact or optimum dosage. A further factor which tends to hamper advance is the variability in the reaction of the patient himself to any given hormone. In the case of epinephrin, as Hoskins has pointed out, the vasomotor reactions are diametrically opposite, depending on initial blood-pressure, bodily vitality, temperature, dosage, reaction of the menstruum, and depth of anesthesia. With pituitrin administration, in the same individual, there is frequently a physiological response of opposite type, which may be due to "the condition of tone of the responsive mechanism at the moment of administration." Another difficulty lies in the fact that we have little or no knowledge of the fate of the gland extracts, or hormones, in the alimentary tract when administered by mouth, or of the extent to which they are absorbed. Plummer has shown that a failure of absorption or a destruction of thyroxin before reaching the general circulation is characteristic of a considerable percentage of patients. As Carlson has pointed out, endocrine therapy can have no effect in conditions due to dysfunction of ductless glands that function on the principle of detoxication, and in the case of the glands which furnish incretions such therapy may fail now and forever, as he states, (1) "if the hormones are not stored up in the gland; (2) if they are too unstable for the necessary chemical processes of isolation; or (3) if on oral administration they are destroyed in the process of digestion or absorption." Nevertheless, with a due consideration of these disconcerting possibilities, there is clearly no justification for therapeutic nihilism or pessimism concerning the future rôle of enodcrine therapy in medical practice. True it is that nothing has been attained up to the present time in states of hypofunction of the ductless glands comparable to the brilliant achievement of Horsley and Murray in the treatment of myxedema, and yet this one step forward in effective glandular therapy has justified all the labor spent in an effort to evolve a specific endocrine treatment in other conditions. Moreover, the use of endocrine substances for their nonspecific pharmacological action, such as epinephrin and pituitrin, has already proved a valuable therapeutic aid.

It would not be possible within the scope of the present paper to do more than to enumerate a few of the clinical conditions in which gland products have been employed with apparent benefit. As has been previously stated, the results of thyroid feeding in states of hypothyroidism stand out as the signal triumph of endocrine therapy. Perhaps the most significant advance of recent years in our knowledge of the function of the thyroid has been the isolation of its active principle, thyroxin, by Kendall in 1914. It has been demonstrated that thyroxin is a general body cell stimulant, and that it is present in a definite amount (on the average 14 mg.) in the tissues of the body; also that 14 mg. of thyroxin administered to a thyroidless person is not fully exhausted until the fifth to eighth week, and that a daily oral dose of 1.6 mg. will hold the basal metabolism of most thyroidless individuals within normal limits. According to Plummer the physiological reaction following the administration of thyroxin is identical with that following the administration of the fresh or dessiccated gland although absorption from the alimentary tract is extremely variable. The various clinical conditions in which the use of thyroid extract has been advocated are manifold, including myxedema, cretinism, obesity, chlorosis, enuresis, epilepsy, nephritis, eczema, hydrocephalus, toxemias, and even sterility. In treating patients with presumed thyroid deficiency we have in the basal metabolism rate a criterion for its administration, although recent investigations have shown that at least three other endocrine glands, the suprarenal, the anterior lobe of the pituitary and the gonads, may influence the rate of metabolism. A contraindication for the use of thyroid is obviously any evidence of hyperthyroidism. There is reason also for the belief that it may prove harmful if administered to patients with pulmonary tuberculosis, and Goodpasture has demonstrated that a heart stimulated to abnormal activity by thyroid products is more susceptible to injury from the poisons of acute infections and chloroform anesthesia than a normally acting heart.

Pituitary gland extracts employed in disorders of the gland have failed to yield the brilliant results of thyroid therapy in subthyroid states, although after removal of the anterior lobe injection of the anterior lobe extract will prolong life. Tethelin, the supposed active principle of the anterior lobe isolated by Robertson in 1916, which was heralded by the pharmaceutical houses as a product capable of accelerating the healing of wounds and of promoting convalescence, has recently been shown to be probably "a very impure mixture of substances of the lipoid class," and no adequate evidence has been adduced for its use as a therapeutic agent. Extracts of the anterior lobe have been found to be variable in their action in one and the same individual. Pituitrin, the active principle of the posterior lobe, contains a pressor substance causing contraction of the smooth muscle fibers. In a specific way it has been used with benefit in diabetes insipidus where a pituitary disturbance has been assumed. Administered hypodermically it has been found to control the polydipsia and polyuria. Recently Stenström has cautioned against its indiscriminate use in this condition, due to the observation that it may cause a marked decrease in the excretion of sodium chloride in the urine. In a nonspecific way pituitrin has been used in obstetrical practice, shock, epilepsy, dementia praecox, impotence, baldness and many other conditions. At present the tendency is to limit its use in obstetrics with the ever increasing reports of rupture of the uterus and fetal death following its administration.

Our progress in the treatment of states of hypofunction of the suprarenal glands with suprarenal products has on the whole proven a disappointment. The hope placed in glandular therapy in Addison's disease has not been borne out in practice. In the alleged clinical condition of hypo-adrenia suprarenal extract or the active principle of the medulla, epinephrin, has been widely used, but the results are scarcely convincing. Since the cortex of the gland appears to be the part essential to life, administration of the whole gland extract would seem to be more rational than epinephrin treatment. Hoxie, after a study of the clinical results of suprarenal therapy in conditions of low blood-pressure, concluded that there was no good evidence of its possessing any significant superiority over other vasomotor stimulants of vegetable origin. Recently, with the viewpoint in mind of a possible relative functional insufficiency of the suprarenal cortex in exophthalmic goiter, Shapiro and Marine have administered fresh ox suprarenal gland cortex to patients with this disease and have reported a rapid gain in weight and muscular strength but without significant change in pulse rate or exophthalmos. Their results are suggestive and merit further investigation. Epinephrin, according to Elliott's law, produces the same physiological effect as stimulation of the sympathetic nerves. As a nonspecific drug it has proved useful in such conditions as asthma, shock, cardiac paralysis, angioneurotic edema, anaphylaxis, urticaria and other disorders.

No significant results have been attained clinically from the use of parathyroid gland extracts or by means of parathyroid gland transplantation in parathyroid tetany. The administration of calcium salts in tetany has proved more efficacious than the gland extract. The extract has been employed in paralysis agitans and other forms of muscular irritability without noteworthy effect.

We have as yet little knowledge of any internal secretion of the islets of Langerhans of the pancreas, but Banting and his associates have recently been attempting to procure an extract from this part of the gland free from pancreatic ferments and have found that the intravenous injection of this extract prepared from dog's pancreas, removed from seven to ten weeks after the ligation of the ducts, invariably exercised a reducing influence upon the percentage of blood and urinary sugar. Their clinical success in the treatment of diabetes by means of this extract is said to be promising and the reports of their further studies will be awaited with interest.

In the domain of the gonads, corpus luteum has been extensively used in such conditions as the vomiting of pregnancy, menstrual disorders, climacteric disturbances and in certain hypertensive states. The evidence regarding its efficacy has been conflicting but on the whole encouraging. With respect to testicular gland therapy it has not been demonstrated that its administration has delayed senility or in any manner proved an elixir of life to the degenerated man. The present trend among physiologists is not to regard the thymus as a gland of internal secretion and we have no certain knowledge of any internal secretion of the mammary gland. The pineal gland appears to be in some way essential to the growth and development of the growing child but it has not been demonstrated that feeding the gland extract to defective children has any therapeutic effect.

Polypharmacy in the form of pluriglandular mixtures has of late run riot. The promulgation of an alluring hypothesis of the selective capacity of the organism to pick out from the blood stream the hormones it requires and to discard the others, simultaneously with the flooding of the physician's mail with enticing literature extolling the therapeutic marvels of the endocrines on the part of some, fortunately not all, of the pharmaceutical companies, is in a large measure responsible for this deplorable state of affairs. Pluriglandular syndromes, even when most outspoken, are difficult to unravel. Indeed their variation may be almost infinite. Hoskins has calculated by a mathematical process that the varieties of such syndromes by virtue of the possible combinations and permutations of hyperfunction, hypofunction and dysfunction of the various endocrine glands may exceed a total of ten millions! As yet we have but scant knowledge of the interrelations of the ductless glands, and uniglandular syndromes are probably rare. As far as can be proved, the selective hypothesis is a "figment of the imagination" while on the other hand it has been conclusively demonstrated that the body cells will take up epinephrin or thyroxin in lethal quantities when exposed to excess of these bodies. Happily for the patients the majority of these pluriglandular mixtures are inert when administered by mouth, except for the thyroid substance they may contain. While it may frequently be advisable after a careful study of the evidence of pluriglandular disturbance in a given patient to administer more than one gland substance, more frequently the rational course to pursue is to seek for the gland primarily at fault, as Biedl has stressed, and plan the treatment accordingly. Only by avoiding an indiscriminate and reckless form of pluriglandular therapy can the conscientious clinician hope to escape the odium that has in some quarters attached itself to glandular treatment and to prevent the legitimate field of endocrine therapy from falling into disrepute.

DISCUSSION

Dr. Lawrence Litchfield (Pittsburgh, Pa.): I am glad that Dr. Cohoe mentioned the astonishing total number of possible glandular syndromes. Dr. Harrower is young yet but give him a little time and he will have the ten million possible combinations prepared and will send descriptions to your office with all necessary advice for their accurate and successful use.

In regard to the mass of facts which Dr. Cohoe has laid before us in this very interesting paper I can only touch a few of the high spots with which I may claim to be somewhat familiar.

Dr. Cohoe mentioned the variability of the glands; also the variability in the preparation of some of the most useful products. Take thyroid tablets, for instance. Burroughs, Wellcome & Company make tabloids and tablets of thyroid substance, while Parke, Davis & Company make tablets of thyroid extract. A grain of Parke, Davis's preparation is five times as strong as a grain of Burroughs, Wellcome's. Recently I prescribed one grain of the latter preparation for a woman. I cautioned her where she should get this prescription filled, but like many patients, male and female, that are rarely given to caution, she took it to her family pharmacist, who filled the prescription with Parke, Davis tablets, 15 to 25 times the strength called for in the prescription. I had cautioned her against the symptoms which might result from an excess of the drug but she paid no attention to this caution. As a result she showed a most beautiful picture of hyperthyroidism, when she finally returned to my office. There is need of standardization.

There are only a few of these preparations that have any demonstrated value therapeutically, and these few should be standardized.

Those of you who heard Marine's remarkable talk yesterday heard all that is really established as regards the thyroid gland and heard it from its source. He pointed out the great danger in the use of thyroid preparations of any kind by any patient until the susceptibility of that patient to the thyroid has been established.

Marine also pointed out—I do not blush to quote him because he knows all about thyroid and he will continue to learn—he pointed out the fact that the adrenals practically belong to the gonads embryologically, and he also pointed out the difference between the function of the cortex and of the medulla of the adrenals, the cortex controlling basal metabolism through the instrumentality of the thyroid. He has reported the application of this principle in the management of several cases of extreme emaciation due to hyperthyroidism. The cases referred to gained one pound a day for thirty days by the use, not of the medulla of the adrenals or of the whole glands, but by the use of the cortex. It has been demonstrated that if the cortex of experimental animals is damaged, the basal metabolism runs up rapidly and the animal loses weight. But if the thyroid gland is crippled before the cortex of the adrenal is destroyed or injured, the basal metabolism does not go up following the operation on the cortex. In other words, the cortex controls metabolism through its effect on the thyroid glands, and furthermore the epinephria seems to be elaborated in the medulla.

If you want to try this effect of adrenal cortex in suitable cases, get the glands, separate the cortex carefully from connective tissue and medulla and then feed the cortices raw or in a mixture of glycerine.

The pituitary gland has a definite therapeutic value for patients with hypopituitarism. A woman having a pituitary tumor may have very uncomfortable symptoms whenever she does not take a sufficient amount of the gland.

As to the recently discovered preparation of the hormone of the islands of Langerhans, it seems to be epoch-making. It does not pretend to be a cure for diabetes but gives promise of being a tremendous aid in the management of that interesting disease.

Just a word in closing. I should like to emphasize what I said yesterday of nutrition, which includes the study of the blood-glands, so-called. This is the live topic of modern medicine to-day. It is a subject in which the next few years are going to show some epoch-making discoveries. If I were a young man looking for a large field with the greatest promise of unequalled opportunities I would seek a fellowship under Marine in New York, and if a young man is bright enough he can get one—if he is bright enough and has the proper spirit of devotion and self-sacrifice.

Dr. A. C. Morgan (Philadelphia, Pa.): Endocrine therapy is a new thing and in our search for the welfare and benefit of our patients we are very eager to grasp at the latest theories and the latest introduction of the so-called therapeutic preparations, which are largely in the hands of the pharmaceutical houses. So we are unconsciously victims of pernicious advertisement. Dr. Cohoe mentioned the "harrowing details" of the annoyance we are subjected to by postal card advertisements coming to us from the far West. Of course it is perfectly proper for the youthful West to try to educate the effete East. And we are swallowing it—everything. I know a man who preserves the cards and books that come from California and who is taking them as law and gospel. I think that in a little while our eyes will be opened.

I want to serve the interest of my patients in regard to honest preparations. Hold fast to that which you know is true. Do not adopt the latest thing that comes to you by mail. Study a few preparations well. I would rather study a few extracts thoroughly and well than indulge in the pluriglandular theory. Because we know our real application of thyroid, of pituitrin, of adrenals, then we can defer the application of the other glands until their status has been established. The use of the three substances mentioned and their derivatives has reached a clarified state so that we are able to prescribe them and use them with the hope of securing beneficial results. But all this is predicated upon one fact—the capability of the patient's body to react to any medication that is given.

The other kind, supposed to advertise the fountain of life, will go into the discard when the rich man has been separated from his money. "A fool and his money are soon parted." The sooner these things are known, the better.

Dr. Braisted recently became head of the Philadelphia College of Pharmacy and Science. He has large plans in view that are already started for the foundation. He is going to make preparations for a large laboratory of original research in the hands and under the direction of men having one purpose in mind, that of the relief of suffering humanity, and not the exploitation of the educated dollar. Many of the pharmaceutical houses are good, some are better, and a few are best. Some are blank.......

With regard to the thyroid preparations, we all know why the iodids were largely used in years past. Simply from our empirical knowledge that the iodids were used so largely in former years because of their stimulation of the thyroids. We are now better able to use the thyroid preparations and get better results from the use of them, first, in the benefit to the patient with the better preparation, and second, better action upon the stomach. So many turned from the iodids because of their upsetting the stomach—and then the iodid rash was not very pleasant. We have made advances along that line.

We would commend, therefore, reading, reflecting upon, and unweariedly digesting all that comes to you, but always have the salt shaker near by.

Dr. Cohoe (in closing): In closing I wish only to emphasize the remarks of Doctors Litchfield and Morgan with respect to the variability of the endocrine products. As has been stated there is an urgent need for standardization of the commercial products and for a determination of the optimum dosage. For example, the action of thyroid extract is uncertain, not only by reason of our lack of information as to the proper dosage to employ but also by virtue of our inability to predict the physiological response of the individual patient to the drug. Plummer found that one of his patients could take as much as 250 grains of thyroid extract in twenty-four hours without any reaction simply because it was not absorbed from the stomach. Even if we succeed in standardizing the preparations we yet must consider the responsivity of the patient to the particular endocrine product.

If we systematically analyze the end results of glandular therapy in the various endocrinopathies, recording alike failure and success, it is quite probable we shall note failure more frequently than success, but only in this manner can we arrive at a precise evaluation of endocrine therapy and determine its proper rôle in our therapeutic armamentarium.

HEALTH AND NUTRITION WORK AMONG PRE-SCHOOL AGE CHILDREN*

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Within the last decade the value and possibilities of nutrition classes have been demonstrated without question. It is now the obligation of an agency which comes in contact with the greatest number of children to get the health program over to them and their families in much the same manner that the nutrition class has done to isolated groups. The public school seems to be the agency best equipped for doing this, and in some cities and towns is already accepting the challenge of the nutrition class by organizing health education programs.

But is the school at present organized to meet the needs of children between the ages of two and six? A recent demonstration made by several coöperating agencies in New York City has shown that the school system with little reorganization has resources for reaching the child of five, but his brothers of two, three and usually four, are still excluded from any health program. Probably the public school is the agency which will eventually be able to get the subject over to the pre-school child; but at present there is no one agency prepared to do it.

It is the aim of this paper to describe briefly some of the work that is being done along these lines and to suggest to those interested in the welfare of young children that an effective health program is certainly being worked out for them.

In 1918 England and Scotland had already, through child welfare acts, provided for the care of children under five, and for instruction of their mothers concerning them. In this country during Children's Year, two million children under seven were measured, and their measurements strongly impressed those engaged in the work with the necessity of more thorough supervision of such children. Infant welfare associations of city and county have been extending the scope of their work to include care of this group; and child health organizations, in addition to the excellent work that they have already accomplished with school children, have been creating health methods for children of the pre-school period. New York, Iowa City, Washington,

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Boston and Chicago are some of the cities which have given reports of careful, scientific studies made on this group; and while it is not within the scope of this paper to discuss in detail these various studies, at least the important conclusions may be presented.

STANDARDS

What present standards of nutritional well-being can best serve in this work? Most of the studies along this line have been done on school children; but even so they are helpful in connection with pre-school age work because attention is directed to various methods of measuring which may also be applied to this younger group, and to such measurements as may best symbolize a well nourished and properly developed body. For instance, Gray, Dreyer, and Hanson suggest the possible superiority of the value of stem height to height measurements as the standard for stature. Also Gray states that the most valuable single measurement of the body is that of chest-girth and shows figures to prove his statement. The interesting work done in San Francisco in which Pirquet's nutritional index "Pelidisi" was used, suggests that this system should be given a more thorough trial on pre-school age children.

Further studies on school children have established facts which are also applicable to the younger group: for instance, that there is a varying increase in weight and height dependent upon season, the practical importance of which becomes significant when comparing the slight increase in measurements of children during spring months with the greater increase in the fall. Another established fact is that there is a normal variability of stature characteristic of race and stock, which necessitates the making of standards for many various groups.

The most valuable contributions to pre-school age standards have been made by Holt, Baldwin and Woodbury, and their tables, which include weight and height for age are all in use. Woodbury's standards published by the Federal Children's Bureau or Baldwin's as found in his book, "Physical Growth of Children," are the best for general pre-school age use at present. The former were formulated after a thorough examination of the measurements of two million children under seven and the elimination of all measurements which had any suggestion of inaccuracy. The children were measured stripped; they were free from disease and defects, and their measurements were done under the supervision of a doctor. One just criticism of these standards is that they include measurements of children of various nationalities, and therefore are not an average of any one racial type.

All of these studies are undoubtedly valuable, but have resulted in a rather complicated series of tables which have caused considerable confusion in the minds of those doing practical work with children. On account of this confusion, a national committee composed of eminent men representing institutions interested in child welfare and in anthropometric measurements has been organized, and is carefully considering current standards of nutrition in order to systematize them. Once the standard is decided upon, workers will be encouraged to measure various groups of pre-school age children according to the manner suggested by the committee.

For the present, as stated, Woodbury's or Baldwin's tables offer standards which may well be used for this age. It should be emphasized however that measurements are only one index of the child's nutrition, and that of equal value are such physical findings as the sparkle of his eye, the color of his mucous membranes, the texture of his skin, his alert attitude, and his posture.

METHODS

As for methods for conducting pre-school age work, they are also in the making. Questions still asked are, "If children are grouped in a nutrition class, is there not a tendency to neglect them as individuals?" and, "Is not group work superfluous if every child is handled as an individual?" It is unquestionable that every child should be studied as an individual but by bringing children in contact with others of the same age, experience shows that their interest in things relating to health is more easily aroused. An example may be cited.

A child entering the class is examined by the doctor. The mother and doctor then talk over the child's condition and discuss plans for helping the child to improve. "But, doctor," says the mother, "my boy won't drink milk." The four-year-old listens with an attentive ear. The doctor catches his eye and says, "He looks like the kind of a boy that will grow strong fast, for he looks as though he could keep up in the races with the other children. There is the milk race; it is a race that means every child in it shall drink slowly three cups of milk daily. The people who win out get a big silver star on their paper milk bottles at the next class. The other boys are beginning to do awfully well." Note that the doctor talks in positive and not negative terms; also that he says "may" instead of "must."

The child leaves the doctor and goes to the class with the other children. There he sees pictures of big white milk bottles; he sees boys get big silver stars on their own paper milk bottles. He hears the lady say, "I love milk, too, and I drink three cups very slowly every day." Then the children sit around a low table and each gets a small cup of milk, perhaps a straw, and perhaps a crisp graham cracker. The other boys and girls take all of their milk, so do the mothers, and it does taste pretty good; he decides he had better do as the boys do and just as well as they do.

What is happening? Health education is becoming a practical, first-hand experience, and not merely a lecture; there is a big chance that this little milk party may be the foundation of a milk-drinking habit formed unconsciously. The group method appeals to certain "social and psychological tendencies latent in every child: the desire to do what his fellows do, and to do fully as well as they."

Granted, then, that in addition to handling each child of this age as an individual, the group method also should be used in the health program, the questions come up, "Where shall the class be conducted, and what personnel and equipment are necessary?"

Children's health centers, dispensaries, public and private kindergartens, and day nurseries are often well fitted for work of this kind; the disadvantage of the nursery being that the mother is not present.

STAFF

Personnel must include the doctor and a trained worker who is present during the class and who does the follow-up work in the homes. Either a trained dietitian or nurse can do this work effectively if she has vision enough to appreciate its broad scope and therefore to study along lines of the work in which she is least informed; and if she is sufficiently patient so that she does not early get discouraged when people do not seem eager for the new methods she is urging upon them.

What of the doctor? Upon him depends much of the success of the class. The mothers will accept his advice providing their children like him; the children will like him if he understands child psychology and applies his knowledge carefully. He must be patient, gentle, friendly, able to tell an appropriate story, careful that he does not make the health game too much of a burden. In no other manner will he be able to win the child's confidence and do a satisfactory physical examination. If this is done without opposition, the child will be glad to see the doctor from week to week, and will work to win a word of praise from him.

In addition to the doctor and his assistant, it is quite ideal if the services of a dentist and oral hygienist can be obtained. A coöperating nose, throat and ear clinic, a neuropsychiatric clinic, and laboratory facilities are essential. Much stress has properly been placed upon the importance of correcting physical defects in undernourished children; fully as much should be placed upon the importance of correcting behavior defects. Stool examinations should be done routinely so that children suffering from intestinal parasites and starch and fat indigestion may be treated and dieted appropriately.

NUTRITION WORK AT STARR CENTER

At the Starr Center Dispensary in Philadelphia, work of the sort described is done and it may be worth while to say a few words concerning it.

The aim of the class is to teach habits of health and hygiene, to protect the children by vaccination and administration of toxin-antitoxin, to detect early evidences of disease, and to correct defects.

The class meets once a week for four months. It is limited to eight children, because experience has taught that eight pre-school age children with eight mothers and perhaps eight babies is the largest number that can be handled effectively in this intensive work, particularly since most of the children are of foreign (Italian) parentage. The number is small but certainly the subject matter is drilled into their minds, and they carry the news to other families. The staff consists of a doctor, a nurse trained in social work, and a cooking demonstrator. A dentist comes to the dispensary twice weekly.

Careful histories are taken and physicals are done when the children are admitted to the class. Each mother and child is seen individually by the doctor every week and reëxaminations are done when indicated. The Woodbury measurements are used as the standard.

After being measured and examined, the children are assembled in the classroom where those who have earned them receive the much coveted stars. Each child helps to put his star on his weight chart which gives him quite a feeling of ownership. Stars are given for gain in weight, regular rest periods, correction of physical defects, and drinking three cups of milk daily. If a child fails to earn a star, an effort is made to discover the reason but care is taken not to emphasize the failure too strongly in class. In fact, if the child is downcast about it, the class leader quickly discovers some way in which the child has done well during the week, and mentions it.

Then comes the lesson. The success of this depends largely upon its simplicity. Several posters representing one health subject are hung on the wall; or, if for instance, the subject is "Vegetables," one of each of the desirable vegetables in season is brought to the class, and the children learn to name them and then to pick them out on the vegetable posters. Meanwhile the single point made is that at least one of these delicious vegetables is to be eaten daily by every growing boy and girl and every big man and woman. The "whys and wherefores" of the desirability of eating them mean nothing to a child of three, but they should be explained to his mother.

Following this and after "washing hands before we eat," the children sit down to the table where perhaps a little spinach is served, the cooking of which has been demonstrated to the mothers. These foods so often refused or, as the mothers say "gagged" at home, are eaten with apparent relish in the group.

What are our results? There are some failures, and, based on weekly gain in weight alone, results are not striking during the class period; but measurements taken six months to one year after graduation show that the majority of children have made more than the average gain. Also health habits, such as the elimination of coffee and tea from the diet, drinking of milk, eating of greens, proper care of teeth, going to bed earlier, acquired by children in our first class, have in the majority of instances, become involuntarily a part of their daily routine. In addition, those children who were extremely bashful or unruly on admission to the class have invariably adapted themselves to the class environment before the end of the session.

The effect of the class on the mothers has been that they have shown unusual coöperation in having children vaccinated, treated with toxin-antitoxin, in having physical defects corrected, and in allowing certain children whose inability to gain could not be explained by the doctor in charge, to go to the hospital for study. Usually the mother, proud of her child's standing among his fellows, is convinced that much of what she has learned in the class is worth while, and she continues to practice it in the home.

CONCLUSIONS

1. The Woodbury or Baldwin tables are at present the best indices of nutrition for children between two and six. Ideal standards must be established. Once these are decided upon, measurements of various groups of children must be made according to standard regulations.

2. The class method combined with personal interviews with those in the class gives encouraging results with children of pre-school age.

3. The success of a class depends largely upon the ability and ingenuity of the doctor and his assistants.

4. Evidences of value of nutrition work among pre-school age children are shown by:

(a) Formation of health habits which stand the test of time.

(b) Signs of physical improvement such as correction of defects; improvement in heart action, correction of constipation, gain in weight and height, and decreased tendency to illness.

(c) Definite tendency on the part of the child to adapt himself to a social and hygienic environment.

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DISCUSSION

Dr. William N. Bradley (Philadelphia, Pa.): I feel that Dr. Bacon has presented a very comprehensive paper and has covered the subject very thoroughly and completely. Unless you have seen this work actually being done, it is hard really to appreciate the importance of what she gives as her third conclusion, the personality of the staff, and in my judgment that counts for most all of the success. Dr. Bacon's work has been particularly difficult, owing to the fact that she is working in a very large measure with a foreign-born population. This is quite difficult because of their customs and superstitions; also because much that she teaches must be conveyed through an interpreter. We find it particularly difficult to get the mothers who have been born in Italy (and ninety-five per cent of the work is among Italians), to change their customs, I think very largely because we do not speak their language fluently. They do not grasp what it is we are trying to do for them. They have not become acquainted with American customs, and they cannot understand this so-called philanthropy, if you will, which wants to give them a better child and to improve their living conditions; they are not accustomed to that sort of thing.

I should like to emphasize the importance of special class instruction. Only in this way can the best results be attained and records show the value of the work.

As far as work among the foreign-born is concerned, I believe that our efforts must be concentrated on getting the message across to the rising generation.

Organizations doing nutrition work should employ a worker who not only goes into the individual homes and instructs in the use of the appropriate foods, but she should also (if permitted) help with the family budget. It is very necessary for the worker to be familiar with the food habits of the people with whom she is dealing, whether they are Italian, Jewish or Negro.

As to the family budget, these people know almost nothing about American foods and the best foods, and they must be instructed; so I think it is just as important to try and instruct them in the foods to buy and how to buy. Such a worker is invaluable. Nutrition workers who specialize in diet will be able to make the family pocketbook fit the dietary and a proper dietary at that.

Dr. Bacon has mentioned the rôle of the school authorities in the matter of the pre-school child. It would seem to me that the time has come when the Board of Education, in line with its policy of public education, should employ inspectors to visit every home, and, finding there a child of five years, insist that the child be taken for a complete physical examination and mental test. This should be recorded in a proper blank which the child could present when admitted to school. In addition, there should be a vaccination against smallpox and immunization against diphtheria, if needed, and advice given as regards tonsils and adenoids, eyes, and needed dental work done. This would be a tremendous saving in school time to the child and annoyance to the school authorities. Why should it not be so? The state is spending millions to educate her children, and if all these things must be discovered by the school physician and time taken from school hours for their correction, it means an aggregate of thousands of hours in instruction lost to these children. The mental test would be of paramount importance in placing the child in an appropriate grade. Many are taken to school and no fault in mentality noted. They are dragged along a grade or two or three, and then the parents decide the child is not up to standard; he is taken to a hospital and finally lands in a feeble-minded institution. This should all be done before the child is entered in school.

I should like to quote just a few figures from a recent report of the work done in New York schools. Of 1,061 children examined for admission to school, 66.7 per cent showed physical defects, 72.6 per cent had defective teeth, 19.2 per cent were undernourished; approximately 25 per cent of kindergarten children are below the four-year level in intelligence, and 30 per cent of the first grade are below the fifth-year level or 10 per cent below standard.

Special study should be made to determine special abilities or aptitudes or special disabilities. The curriculum should be revised for those more bright, with proper training for those less bright.

Dr. John F. Sinclair (Philadelphia, Pa.): I cannot add anything to Dr. Bacon's very complete paper, but I do want to stress what she naturally was a little reticent about stressing forcibly, and that is the all-importance of having the right kind of a physician in charge of this nutrition clinic work. Dr. Bacon spoke of it, but as she is the physician there, she naturally did not stress that as I feel that it must be stressed. It is, to my mind, all-important that this class work, this nutrition work, shall be properly supervised medically, and I do not think that we can make that point too strong.

At the Babies' Hospital in Philadelphia, every case that comes to the hospital is admitted at once to the out-patient department and the medical service and gets a complete physical examination. After that the patient is referred to such special services as may be necessary. I might say that we take into the out-patient department children up to six years of age; in the hospital those up to three, but all children from two to six are routinely sent to the dental hygienist for an examination to complete the physical examination made by the medical doctor. And, of course, if they then have to go to the dentist, they are so referred. If there is nose and throat work to be done they are referred to that special department. But the point I want to make, is that these are medical cases from the beginning and are always under the supervision of the medical staff, and this is, I believe, a great help in properly supervising the nutrition work.

We have a very efficient worker in the nutrition field working for us, and she has done what Dr. Bradley has drawn attention to; she has helped materially to supervise the budgets of the family and to show them how they can make their money go to the farthest possible point; and I think that is a very important side of it.

Another point that Dr. Bradley brought out was the point in regard to speaking the language of the people. That is a very important point. We are fortunate in that we have a Polish doctor who is able to talk with them in their own language, and that aids very materially in getting to the bottom in these cases.

Dr. C. H. Witmer (Lancaster, Pa.): There is one point I should like to stress in this admirable paper of Dr. Bacon's: Looking at the question from the standpoint of the school physician, one sees these children who have been undernourished come to the schools and he finds a great number of physical defects. There is one plea I should like to make to all physicians within my hearing, and that is that we impress upon the family physician the importance of the child between the ages of two and six, when that child enters school. I feel that we do not appreciate that important period in the life of the child. If there is any one period in his life when he is neglected it is some time between these ages.

Those figures that Dr. Bradley quoted, showing the great number of physical defects, are borne out here in our rural sections in Pennsylvania. We see that, year after year, and the difficult part of this whole subject, to my mind, is in having the family physician realize the importance of this work before that child gets into the school. I believe all of us can preach this gospel if we take the opportunity.

Dr. John D. Donnelly (Harrisburg, Pa.): I have listened so attentively to Dr. Bacon that I feel almost as though I could recite her paper. Her work is admirable.

I want to call attention to a point that is overlooked by a great many nutritional workers. They set a scale up on the wall for age and height and weight. The Americans are not a race. They do not take into account what Dr. Bacon brings out; they make no allowance for stock and race. There may be a little Italian boy who is short but has normal weight for his height, but few consider what height the Italian boy should be for that age, the little fellow may be stunted even for an Italian. Many factors might cause this and the little youngster goes on neglected.

The problem is distinctly a medical one, and I feel it should be under the direct supervision of the doctor. One cannot hold the attention of young children for any length of time. They have to be captured. Naturally, the psychological factor is an important one. To get results, as much trouble, care and effort must be spent on the mother as on the child. After an examination has been made the mother must be impressed with the necessity of following out the doctor's instructions, which should be given in detail, and told how to overcome the child's disinclination to do as directed; how, for instance, to put him to bed at a certain hour; how to get the child to eat the right food, etc. The mother has probably tried her best but failed, and the doctor once more has to take the necessary time to explain various methods by which the individual child's confidence may be gained and his coöperation secured.

The nutritional worker can get the mother's confidence and do just as good work along these lines. But there are other things about which the nutritional worker cannot tell that mother; for instance, the question of bed-wetting. As we know, many children are bed-wetters because of lack of control. The doctor can impress that point on the mother. We recently saw about fifteen or sixteen youngsters, school children, who were bed-wetters. We examined them thoroughly and could find no reason why they could not control their sphincters. We taught them to train themselves, with the result that after a month's effort, we were able to cure most of them, the others being markedly improved. There are many similar faults which can be corrected and I feel that in his work the doctor should pay particular attention to such details.

Dr. Bacon (in closing): I certainly agree with Dr. Sinclair that one of the most important phases of the nutrition work is the medical supervision of the child. If there were time it would be interesting to go more into the details of this end of the work, because certainly if a doctor is not interested in and does not know all about the physical and mental condition of the child, the best advice cannot be given to his mother.

The importance of the mother's understanding what the doctor is saying of course is very evident. No group that is doing this type of work with foreign-speaking people should attempt to do it without an interpreter to interpret what the doctor is saying to the mother.

I was very glad that Dr. Donnelly emphasized again the fact that there is a definite variation in measurements according to race and stock. This is a most important fact to consider. I also was glad to hear him state his methods of attracting the attention of the mother and getting her coöperation.

In regard to the mental hygiene of these children, I should simply like to suggest to the members of the Society that the Bureau of Educational Experiments in New York City has done a work which has recently been published in their book called "Health Education and the Nutrition Class." This book is rather technical but yet not so technical that every one of us cannot get a great deal out of it. It certainly is the most honest and accurate expression of results of work done along this line that I have read.

SELECTIONS

THE SIGNIFICANCE OF BLOODY AND YELLOW SPINAL FLUID

CHAUNCEY L. PALMER, M.D.

PITTSBURGH

During the past ten years lumbar puncture with the biological, chemical and bacteriological examination of the spinal fluid has been used quite extensively in all branches of medicine and surgery as a diagnostic, prognostic, and therapeutic measure.

With the increasing use of the various examinations of the spinal fluid, rather definite microscopic and chemical findings have come which lend aid in a great many cases. Out of these findings have come certain ones which are characteristic. Among these are the bloody and yellow spinal fluid.

The bloody spinal fluid referred to is not the unevenly distributed, blood-streaked spinal fluid of contamination, but the evenly mixed bloody spinal fluid of diseased conditions. Nor will the bloody spinal fluid of traumatic conditions be referred to, except to say that the surgeon should not depend absolutely on bloody spinal fluid as a diagnostic sign of injury, because the patient may have some disease condition which could cause it irrespective of injury.

In the American Journal of Medical Science for April, 1920, Nammack describes the true syndrome of Froin as consisting of: (1) A spinal fluid which coagulates at once or upon standing, the consistency of the clot varying, but often being so tenacious as to permit one to invert the tube; (2) a yellow coloration or xanthochromia; (3) a marked increase in cells and albumin. All who have studied this condition are agreed that the coloration is due to presence of pigment, chiefly bilirubin, and the increased coagulability to an increase of fibrinogen.

He states that in 96 cases the complete syndrome occurred in only six. It appears that the true syndrome of Froin represents the later development of a process, of which the yellow coloration alone represents an early stage. Of the six cases that presented the complete syndrome, two were meningeal hemorrhages, two were cases of tuberculous meningitis, and two were cases of poliomyelitis. In 5,801 spinal fluids, yellow fluid was observed in 1.6%.

His conclusions are: (1) Yellow spinal fluid occurs in a wide range of diseases of the spinal cord and meninges. (2) The complete syndrome of Froin is rare. In acute and subacute conditions the presence of yellow fluid suggests the probable diagnosis of tubercular meningitis or poliomyelitis.

The following case reports bear on this subject:

Case 1.—J. A., aged 32. Family history negative. His history included malaria, and convulsions at various times throughout life which were diagnosed as epilepsy. Patient became unconscious about May 10, 1920. Admitted to the hospital on the 13th day of May. Patient was a well developed, well nourished, adult, male negro. He was in coma. Physical examination showed a scar on the left eye. There were a few moist râles scattered throughout the chest, especially marked in lower lobes at the posterior. His abdomen was rigid and scaphoid. He had general convulsions at irregular intervals. His temperature ranged from 100°F to 104°F during the first few days in the hospital. His blood-pressure was 150 systolic and 65 diastolic. His respiration was 28 to 32 on admission, rising to 40 and reaching 48 after the second day, then returning to 20 to 24 on the fourth day. His pulse ranged from 96 to 146 during the period. He also had cervical rigidity, some stupor and convulsions. His blood count showed 19,600 WBC with 90% Polys. Urinalysis was negative; blood culture and Wassermann tests were both negative.

During the first four days in the hospital three spinal punctures were made. The first one was practically normal, including Wassermann and colloidal gold. The second one showed an evenly distributed bloody fluid, with a plus globulin, but normal colloidal gold and sterile culture. The third spinal fluid presented the same findings as the second. On the fifth day of his illness the temperature settled down to normal and the patient made a complete recovery. A diagnosis at the time of hemorrhagic meningitis of undetermined cause was made in the case.

Case 2.—F. D., colored, adult, male, aged 24, admitted to the hospital October 26, 1920. His temperature, pulse and respiration were practically normal. His blood-pressure was 125 systolic and 85 diastolic. Patient fell over while at work and remained unconscious while in the hospital. His blood count was negative; urinalysis showed a heavy precipitate of albumin. Spinal fluid was bloody. The blood was finely diffused throughout the fluid. After centrifugalization the supernatant fluid was distinctly yellow. Globulin in the supernatant fluid was very strongly positive. The colloidal gold test was 2555543100 (luetic) and the Wassermann test was two plus.

Patient died on the third day after his admission to the hospital. No postmortem. A diagnosis of general visceral syphilis with hemorrhage into the cerebral ventricle was made.

Case 3.—E. E., aged 44, gave a history of ear trouble. He was admitted to the hospital December 6, 1920. His blood showed 24,000 WBC, of which 80% were polynuclear neutrophils. His urine showed a heavy precipitate of albumin, with fine and coarsely granular casts. His blood Wassermann was anticomplimentary. His spinal fluid was gray-yellow in color, four plus globulin. A cell count of 3,498 in which 98% were polynuclear neutrophils. The colloidal gold was .0123542100, which is a meningitis curve. The spinal fluid Wassermann was negative. Direct smears from the sediment revealed innumerable Gram-positive diplococci of the biscuit variety, probably pneumococci. Culture revealed positive pneumococci. Patient died within twenty-four hours after his admission to the hospital. This case was definitely one of acute pneumococcic meningitis. No postmortem.

Case 4.—Baby J., born December 11, 1919. On 21st this infant developed a high temperature and evidence of meningeal irritation. On December 25, 1919, the spinal fluid showed a peculiar yellow color, was cloudy, showed a four plus globulin and a cell count of 1512. Smears from the sediment showed innumerable Gram-positive cocci, arranged in chains, positive for streptococcic meningitis. Patient died. No postmortem.

Case 5.—V. R., female, aged 2 1/2 years, Italian, showed clinical signs of meningitis. Spinal fluid was bloody with four plus globulin and cell count of 3,000. Bacteriological examination showed innumerable Gram-positive cocci in pairs and in short chains, both intra- and extracellular. The patient's parents signed a release from the hospital, and left, taking the child with them. Therefore the outcome is not known.

Case 6.—M. P., adult, female, aged 36, developed in the sixth week of a continued fever, evidence of meningitis. Her spinal fluid was yellow, showed 12 cells and globulin. Diagnosis: typhoid fever with encephalitis. Patient died. No postmortem.

Both the bloody and yellow spinal fluid occurred in a great variety of conditions in practically all ages. All the cases of bloody spinal fluid showed a supernatant fluid which was yellow after centrifugalization.

From a careful study of the first case it is very probable that it was one of bronchopneumonia, complicating epilepsy, and the bloody spinal fluid was a coincidence. Bloody spinal fluid is probably due to: Conditions within the blood, such as purpura or any condition which reduces the coagulating power of the blood; blood vessel changes, due to various toxemias and infections; also various mechanical factors causing stagnation and varicosities of the veins (such as spinal tumors, curvature, etc.).

CONCLUSIONS

Both bloody and yellow spinal fluid are not extremely rare. The yellow color in spinal fluid is probably due to pigments derived from blood which is the result of slight previous hemorrhage. Inasmuch as yellow bloody spinal fluids occur in a great many instances, either or both may exist before the disease has developed noticeably.

Careful search should be made by spinal fluid and blood examinations, particularly the coagulation time, also examination of the retina for evidence of sclerotic vessels, in order to determine the possibility of recognizing the existence of early underlying conditions which may cause yellow spinal fluid previous to the development of the present condition, and which may have nothing to do with the disease from which the patient is suffering at the present time.

308 Diamond Bank Bldg.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

OUR PRESENT KNOWLEDGE OF THE ETIOLOGICAL FACTORS IN EPIDEMIC INFLUENZA

DR. SAMUEL R. HAYTHORN

The etiological factor in epidemic influenza is still uncertain. That influenza is an acute communicable disease, transmitted directly from person to person through contact, can scarcely be disputed. Attempts to demonstrate the cause have been made along two lines, namely, to prove that the disease is due to the Pfeiffer bacillus, and to show that a filtrable virus is responsible for the first symptoms and that the Pfeiffer bacillus is present in the rôle of a secondary invader.

In 1892 Pfeiffer described a very small Gram negative bacillus which he isolated from the sputum of typical cases of influenza but which he failed to find in normal controls. Enormous amounts of work have been done to try to determine either that the B. influenzæ is the etiological factor in the disease or to rule it out altogether. Neither of these objects has been accomplished up to the present time. In favor of the Pfeiffer bacillus as the cause we have its indisputable pathogenicity in sporadic cases of influenzal meningitis, chiefly seen in children; its almost constant presence in cases of epidemic influenza, particularly when complicated by pneumonia; its comparatively rare occurrence in normal individuals; and the recent demonstration by Parker that early cultures of B. Pfeiffer, under twenty-four hours, are extremely toxic while those over thirty-six hours have lost their toxic qualities. Against the Pfeiffer bacillus as the cause, we have the failure to find it in many instances which are clinically epidemic influenza, particularly when not complicated by pneumonia; the occurrence of the bacilli at other times than epidemics in sinus disease, chronic lung infections and rarely in normal carriers; the failures of vaccines prepared from the organism to protect against the disease, and finally the utter failures of Rosenau, and of McCoy and Richey to produce the disease in relatively large groups of presumably susceptible persons, by inoculations with cultures of the organism.

Eventually, it will probably be shown that the Pfeiffer bacillus is an organism which, if not the real cause of epidemic influenza, has an especial affinity for symbiotic growth with the real cause.

The more recent efforts to determine the cause of epidemic influenza have been along the lines of a filtrable virus. In 1918 Nicolle and Lebailly reported a series of experiments in which monkeys, inoculated with filtered blood, and nasal secretions from uncomplicated grippe cases, developed symptoms similar to mild forms of epidemic influenza. In 1915 Foster had obtained similar results with filtrates from common colds. Many series of experiments have been made along these lines but without uniformity of results. In April, 1920, the regular program of the Saturday afternoon session of the annual meeting of the American Association of Pathologists and Bacteriologists, which was being held in New York, was interrupted for about an hour while Olitzky and Gates of the Rockefeller Institute presented experimental results which they had obtained in animals inoculated with filtered nasal secretions from early uncomplicated cases of influenza. The lesions demonstrated were suggestive but not altogether convincing. In 1921 they reported that they had grown minute, strictly anaërobic bacilloid bodies from their virus, and that pure cultures of these bodies produced the lesions. The virus resists 50 per cent glycerol for several months and has been named the Bacterium Pneumosintes, meaning lung "injurer" or "devastator."

The work of Olitzky and Gates has not, as yet, received sufficient confirmation. Gordon reported an experience similar to theirs in London in the early months of 1922, and Lister in South Africa, who had formerly reported in favor of the Pfeiffer bacillus, has recently stated that he has satisfied himself of the presence of an anaërobic filter-passing organism similar to that found by Olitzky and Gates.

A DISTURBANCE OF THE ISOHEMAGGLUTININS IN THE BLOOD OF THREE FATAL CASES OF BACTEREMIAS

DR. G. R. LACEY

Prior to 1900, it was supposed that biologically all human bloods were similar. From 1900 to 1906 Landsteiner and Shattock found that by separating the serum from the cells of a large number of patients, and by testing the serum of each against the cells of the others, the resulting reactions showed these bloods to belong to three distinct groups. The result of the mixture of the serum of one patient and cells of another was determined by the presence or the absence of an agglutination of the cells. They advanced the thory that the agglutination reaction was due to two factors, one of which was present in the serum and the other in the cells. The factor present in the serum was designated as agglutinin and that in the cells as agglutinogen. When a serum containing a given agglutinin was added to cells containing its corresponding agglutiogen there was always a resulting agglutination of the cells. Therefore, theoretically, the two could never be present in the same serum. On this basis these authors found the bloods they examined to fall into three groups.

Jansky in 1907, and Moss in 1910, working independently, found that there was still another group of patients whose bloods had not been described in the foregoing table. This group was one whose cells were agglutinated by the sera of all the other groups but whose sera failed to agglutinate the cells of either of the three previously described groups.

A somewhat confusing point has arisen in the two classifications as set forth by Jansky and Moss in that the numbering of the groups by Moss is opposite to that of Jansky. The groups I and IV of the Jansky are transposed in the Moss. However, the groups II and III are the same in the two classifications, so that for statistical purposes, one can rearrange the figures in any report to conform to the one used by him if the method used has been designated.

For comparison of the two methods the schematic diagrams are as follows:

JANSKY CLASSIFICATION

	SERA			
Cells	I	II	III	IV
I	—	—	—	—
II	+	—	+	—
III	+	+	—	—
IV	+	+	+	—

MOSS CLASSIFICATION

	SERA			
Cells	I	II	III	IV
I	—	+	+	+
II	—	—	+	+
III	—	+	—	+
IV	—	—	—	—

Happ has shown that the fixed groups are not present in the blood of infants at birth, but that as a rule they are established during the first year, although some are delayed for four or five years. He has also shown that the groups are established in the cells earlier than they are in the serum. There is no doubt that heredity plays a great part in the establishment of the group to which an individual belongs.

Case No. 1: Patient was a white female, age about 30 years. On February 10, 1922, patient developed an acute colitis, followed by an erythema multiforme, which was accompanied by an irregular temperature. Gradually the patient's condition became more unfavorable and she was admitted to the Allegheny General Hospital March 3d. On March 6th blood culture showed bac. lactis aërogenes. The same organism was isolated from the blood and also from the urine on each of three subsequent attempts between March 6th and March 30th. The later cultures contained streptococcus fecalis (viridans) and bacillus pyocyaneus in addition to the bac. lactis aërogenes.

March 17th the condition of the patient had become so much worse that a transfusion was deemed advisable. Her blood belonged to group III according to the Moss classification. A suitable group III donor was found, and on March 18th, 150 c.c. of blood were given intravenously. Again on March 20th, 300 c.c. of blood from the same donor were given after the bloods had been tested for compatibility. No unfavorable reaction followed either transfusion. March 23d, when the two bloods were again tested, the one against the other, it was found that the serum of the patient strongly agglutinated the cells of the donor. The cells of the two bloods were then reëxamined to rule out the possibility of an error in the former groupings. They were found to belong to the same group, i. e., group III, as had been found on the previous examinations.

Several other persons volunteered as prospective donors. Among them were: 1 group I; 5 group II; 8 group III; and 4 group IV. The patient's serum agglutinated the cells of every applicant, irrespective of the group to which he or she belonged. Her cells, however, gave the typical reactions of normal group III cells.

On March 25th another sample of blood was obtained for examination. Both serum and cells from this specimen reacted in a perfectly normal manner so far as the isohemagglutinins were concerned. Two of the group III donors whose cells had been agglutinated by the patient's serum during the period of disturbance of the isohemagglutinins, acted as satisfactory donors on March 26th and 28th. No reaction followed either of these transfusions.

Case No. 2: Patient was an Italian female approximately 40 years old, who had been sent to Allegheny Hospital January 1, 1923, in an unconscious condition, by a public health worker.

On January 3d blood culture contained a type III pneumococcus.

Patient died January 5th, four days after admission. Before death, however, a sample of blood was collected for grouping. Results of grouping her cells showed that she belonged to group III. Her serum, however, agglutinated all four groups of cells exactly as the preceding case had done.

A satisfactory explanation for the appearance of the peculiar reaction in these two instances was wholly lacking. Several suggestions, however, have presented themselves for consideration. Chief among these have been:

1. A change in the pH. of the blood.

2. The presence of these organisms or of some toxin produced in the blood.

3. The presence of some agglutinating substance secreted by the bacteria, either within the blood or in the tissues, and absorbed into the blood stream.

It is believed that the bacterial growth is not wholly responsible for the above changes, but that the true cause was probably a physicochemical one which has not been determined.

Finally it is strongly emphasized that in preparing for transfusions one should not be satisfied with having the patient and donor grouped with standard sera, but should always insist upon having the serum of the recipient tested against the cells of the donor and vice versa, even though they belong to the same blood group.

Dr. O. Pine queries: Is it not about time again for the public press to focus its spotlight upon some alleged medical or surgical genius from wonderful Europe, a la Friedman or Lorenz, and use up tons of paper and barrels of ink in damning "the bigotry, the narrow-mindedness" of the medical profession in failing to prostrate itself instantaneously before the press-agented idol?

Dr. O. Pine queries: What a splendid example to us all—to the medical organizations of the various states, of the different counties, to the members themselves in their professional contacts and contracts—the union of Delaware and Pennsylvania in the ATLANTIC MEDICAL JOURNAL! "Vade retro" provincialism! "Te salutamus" broad-mindedness!

Dr. O. Pine queries: To the medico who is rated as a poor, injudicious investor—why not invest your all in "Medicine and Surgery," Preferred and Common?

DIPHTHERIA

The children of the well-to-do are more susceptible to diphtheria than the children of the poorer classes, according to the best-known medical authorities. This is because the segregation and relative isolation of the well-to-do children renders them more liable to infection in case of exposure than the poorer children. American children have the disease far more frequently than the children of Italian or foreign extraction, according to Dr. Abraham Zingher, assistant director of the Research Laboratory of the Department of Health of New York City, writing in *Mother and Child*, the official organ of the American Child Health Association.

"It is an extraordinary fact that, by application of the Schick test for diphtheria there were found to be sixty or seventy-five per cent of susceptible children in the schools located in the better sections of the city compared with fifteen to twenty-five per cent in the schools located in the poorer sections," says Dr. Zingher. "The racial and hereditary family factors also seem to have some influence on these results. Some of the highest percentages of positive Schick test have been found in families of native American stock. Fairly higher percentages have also been found among the colored children. On the other hand, children of Italian extraction have shown the smallest proportion of susceptible individuals."

Great forward strides have been made since 1895 in the treatment of diphtheria, according to Dr. Zingher. By means of the antitoxin introduced in that year the mortality from this disease has been reduced from fifty or sixty per cent down to ten per cent, but there has been a startling increase in the number of cases reported during the past two years. In 1920 there were 149,600 cases of diphtheria in the United States, and in 1921 there were 209,000 cases.

"Diphtheria still presents a very formidable problem," says Dr. Zingher, "the elimination of which requires our best efforts. Fortunately we have within our hands at the present time methods for the eradication and control of diphtheria. These are, first the Schick test, and second, active immunization with diphtheria toxin-antitoxin. We believe that the ultimate control of diphtheria is only a matter of time.

"We emphasize the urgent necessity of immunizing against diphtheria all the younger children from six months to six years of age. Fully eighty to eighty-five per cent of all cases of and deaths from diphtheria occur in children under the age of five years. It is, in fact, the foremost fatal disease in children from one to three years of age.

"The application of the Schick test is a very simple little procedure and is rapidly carried out. Most of the children say it feels like a mosquito bite. The injections of toxin-antitoxin, three of which are given at weekly intervals to every child that is susceptible to diphtheria, produce a lasting and probably permanent immunity."

American Child Health Association, 370-7th Ave., New York City.

Dr. O. Pine queries: Why the super-courtesy exhibited in discussions toward fantastic theories and treatments that violate the canons of logic? Why style a half-proved, half-fledged affair an "epoch-making discovery," or regard a six-months' medical experiment as "placing for all time this subject upon a firm, permanent basis?"

HOTEL ACCOMMODATIONS

FOR THE MEETINGS OF THE

Medical Society of the State of Pennsylvania

TO BE HELD IN

Pittsburgh, Pennsylvania

Seventy-Third Annual Session, October 1-4, 1923

HEADQUARTERS—WILLIAM PENN HOTEL

To Delegates, Members and Guests:

There is set out in this communication full information relative to hotel accommodations for delegates, members and others, including guests, who will attend the Seventy-third Annual Session of the Medical Society of the State of Pennsylvania, to be held in Pittsburgh, Pennsylvania, October 1-4, 1923.

The William Penn Hotel, centrally located and readily accessible to practically all transportation lines of Pittsburgh, has been designated as headquarters. The management has shown every desire to coöperate in making our meetings a success.

It is important that your reservation be made as early as possible in order that accommodations at the particular hotel you wish to patronize may not be exhausted. Detach, fill in and mail the attached reservation blank direct to the hotel of first choice.

Instructions for Making Hotel Reservations

In making your reservation please employ the following procedure:

1. Select your own hotel as per enclosed schedule. Note that provision is made for second and third choice.

2. Detach, fill out and mail the attached reservation blank direct to the hotel which you indicate as your first choice.

3. If rooms are available at the hotel which you indicate as your first choice you will receive acknowledgment and confirmation from that hotel.

4. If the accommodations at the hotel which you have indicated as your first choice are exhausted, your request will be referred to the hotel committee, which committee will take up with the hotels of second and third choice the question of accommodations and advise you, if made. You will also receive confirmation direct from the hotel at which reservation has been made.

5. Should accommodation be unobtainable at hotels of second and third choice, the hotel committee will make reservation for you in an equally desirable hotel and inform you of the name and address of such hotel. The hotel will also confirm to you direct the reservation made.

6. Should you arrive in Pittsburgh without having made hotel reservation, communicate at once with the chairman of the hotel committee, Dr. I. H. Alexander, 725 Jenkins Bldg., Pittsburgh, Pa., Bell Phone, Smithfield 1566, and every assistance will be given.

7. If, after making reservation, you find it is impossible to attend, it is important that you immediately notify the hotel which has agreed to accommodate you.

HOTEL COMMITTEE

I. H. Alexander, Chairman
E. S. Walls
G. H. Walker
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Hotel Rates Per Day

William Penn Hotel, William Penn Place—Headquarters

All guests attending the Session can be accommodated at this hotel if reservations are made sufficiently early, at the following rates:

Court Rooms: Single with shower bath, $4.00 and $5.00; with tub bath, $4.50, $5.00 and $5.50 per day. Double with shower bath, $6.50; with tub bath, $7.00; with twin beds, $8.00 per day.

Outside Rooms: Single with tub bath, $6.00 and $7.00 per day; double with tub bath, $8.00 and $9.00; with twin beds and tub bath, $9.00, $10.00 and $11.00 per day.

Other Hotels

Name and Location	*Rooms Without Private Bath*		*Rooms With Private Bath*	
	Single	*Double*	*Single*	*Double*
Fort Pitt Hotel, Penn Ave. and 10th St.	$2.50 to $3.00	$4.00	$3.50 to $5.00	$5.00 to $8.00 (twin beds, $6.00 to $10.00)
Seventh Avenue Hotel, 7th Ave.	$2.00 to $3.00	$4.00 to $5.00	$3.00 to $5.00	$5.00 to $8.00
Hotel Schenley, 5th Ave. and Bigelow Boulevard	$4.00	$6.00	$7.00	$8.00
			Two connecting rooms with bath for 2 persons, $12.00 per day. Two connecting rooms with bath for 4 persons, $14.00 per day.	
Hotel Henry, 417 5th Ave.	$2.50	$4.00	$3.50	$5.00 and up

APPLICATION FOR HOTEL ACCOMMODATIONS

Seventy-third Annual Session of the Medical Society of the State of Pennsylvania, Pittsburgh, Pa. October 1-4, 1923.

Hotel .... 1st Choice
(Mail application to hotel of first choice)

Hotel .... 2d Choice

Hotel .... 3d Choice

Kindly reserve the following:

Number of rooms .... with bath $.................. per room.

Number of rooms .... without bath $.................. per room.

These rooms to be occupied by .... persons. If possible state names of persons constituting party.

....

....

Arrival: Date ....A. M.........P. M.

Name ....

Address ....
(street) (city) (state)

Date ....

Note to Hotel named as First Choice: If hotel of first choice is unable to make reservation requested, that hotel should immediately forward this application and all other correspondence, if any, to Dr. I. H. Alexander, Chairman, Hotel Committee, 725 Jenkins Building, Pittsburgh, Pa.

THE ATLANTIC
MEDICAL JOURNAL

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JUNE, 1923

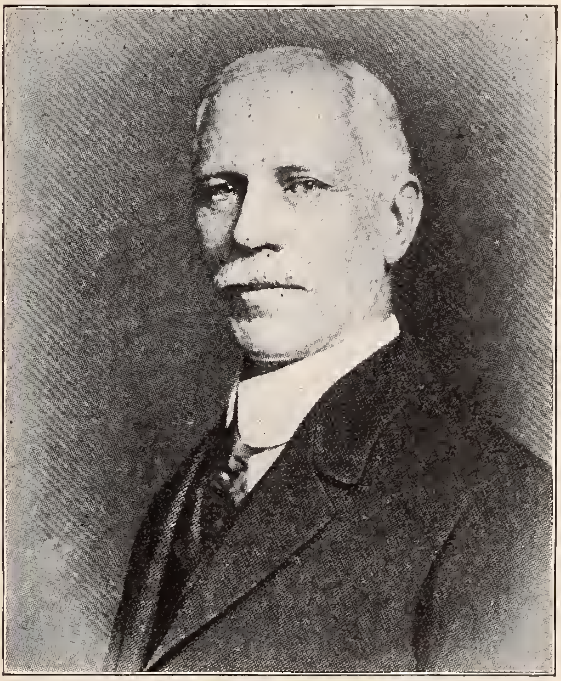
EDITORIALS

OUR PAST PRESIDENTS

It is always a loss to any organization when a man passes on who has been interested enough and useful enough in the work to have filled the highest office in the power of the organization to bestow—the presidency. Even though his term of office may have expired, his interest and his influence continue through the years, and his loss always leaves a vacancy that can be filled by no one else.

Such a loss has been recently sustained by the Medical Society of the State of Pennsylvania, when Dr. Isaac C. Gable, who was our president in 1906, died at his home in York on April 12th from uremic poisoning.

Dr. Gable was born in Windsor Township, York County, in 1849, the son of Valentine and Mary Miller Gable. He was educated in the public schools and at the Pennsylvania State Normal School at Millersville. Later he taught in the schools of Pennsylvania, Ohio and Indiana. In 1874 he began the study of medicine in the office of Dr. James W. Kerr, of York, and was graduated from the Medical Department of the University of Pennsylvania in the class of 1877. During his undergraduate period and for a year after graduation he was a private student of Dr. Charles T. Hunter, at that time clinical professor of surgery at the University. In 1878 Dr. Gable began the practice of medicine in York and continued in active practice there until the end of his life. He early became one of the leading members of his profession in that community, and by his conscientious and faithful work won a large and appreciative following.



ISAAC C. GABLE, M.D.

Dr. Gable was the pioneer of abdominal surgery in York County and became broadly known for his skill as a general surgeon. He was one of the founders of the York Hospital but was not actively connected with this institution for many years. The death of Dr. Gable removes one of the prominent landmarks in medicine in Pennsylvania. He was always one of the strongest supporters of all thought and action leading to higher professional standards. For many years he was prominent in the State Society, serving six terms of three years each as a member of the Board of Trustees. From 1891 to 1900 he was a member of the State Committee on Public Policy and Legislation, and for seven years served as chairman of this committee. During this period of service he distinguished himself for his strong and effective work in securing the enactment of the medical law of 1893, which regulated medical practice in Pennsylvania for 20 years. For twelve years, during the administration of Dr. Benjamin Lee as president of the State Board of Health, Dr. Gable served with marked ability as medical inspector of York County.

Dr. Gable was an active member of the American Public Health Association and of the American Medical Association, becoming a member of the latter in 1880. At the Milwaukee meeting in 1891 he was elected chairman of the Pennsylvania delegation. At the meeting in Portland, Oregon, in 1905, and in Boston, in 1906, he served as a member of the House of Delegates. Dr. Gable was also a member of the Pan-American Medical Congress and assisted in the organization of that body. He was an active member of the York County Medical Society, was president of that body in 1890, and held various other offices at different times.

Dr. Gable was a member of the York Chamber of Commerce, the York County Historical Society, the National Geographic Society, the Pennsylvania Forestry Association, the General Alumni Society of the University of Pennsylvania, the General Alumni Society of the Medical Department of the University of Pennsylvania, the Philadelphia Alumni Society of the University, the Medical Club of Philadelphia, the Lafayette Club of York, the York Country Club and the York Motor Club. Dr. Gable was a Presbyterian and a member of the Board of Deacons of the First Presbyterian Church of York.

In 1888 Dr. Gable was married to Miss Eva A. Fondersmith, of Lancaster, Pa. His widow, one son, Raymond F., a teacher of Romance Languages in the York High School, and one sister, Miss Mary A. Gable, survive him.

The past year has seen the the death of three of our past presidents, Dr. William S. Foster (1895), Dr. Cyrus Lee Stevens (1919), and recently Dr. Gable. Of the 73 presidents of the Society, but 16 are now living, many of whom are still taking an active part in the work of the Society.

INFORMING THE PUBLIC IN MATTERS MEDICAL

The attitude of the medical profession and of the public towards the dissemination of medical knowledge to the laity has changed greatly in the past decade. We do not refer to the signed articles presumably paid for by newspaper syndicates and often accompanied by wood cuts of the writers—nor do we refer to the "questions and answers" such as "Question: My hair has been falling out lately. What shall I do for it? Answer: Bathe the feet carefully morning and evening for two weeks. If not better, restate your question and enclose a stamped addressed envelope."

Rather, we refer to the large question of presenting to the public information concerning preventive medicine and hygiene. We repeat, the attitude of the public and the profession has changed in this matter greatly of late years. However, a real problem has presented itself in the premises.

It seems difficult or impossible for many of the profession to distinguish the difference between imparting useful information concerning health matters to the public and advertising their own particular abilities.

It is probably true that many times the "offending" material (speaking from an ethical standpoint) is the result of the too friendly attitude of the local editor or reporter; but whether that is true or not the "offense" frequently occurs.

The public should be given information in matters medical; and the information, to be of real value, should come from a medical practitioner, but Heaven preserve us from having the subject matter introduced as it too frequently is by some such sentences as "The subject is handled in an unusually attractive and forceful way by Dr. A., who has the most extensive ~~and thorough~~ training along these lines of any physician in this district."

We repeat—the public ought to be informed upon medical questions by medical practitioners, but in presenting this information the ethics of the profession should always be carefully guarded.

If the medical profession is to save itself from everlasting disgrace something will have to be done to make it possible to present these proper subjects of information without degenerating into a form of vulgar newspaper advertising.

C. R. P.

THE DOCTOR AND HIS VACATION

In what field of endeavor other than medicine do you find men giving all their time and effort to helping others and forgetting self? Doctors should realize that in order to do their best at all times they must relax once in a while and get out of reach of the telephone. A brain beset with responsibility for the lives of others has very little spare time to devote to the happier, lighter vein of life. When an athlete trains too hard he becomes stale and has to quit for a while, and so it is with others. It is also very easy to get in a rut, and hard to get out of it.

Everyone should so arrange their affairs that a complete change of scene from the everyday strife and turmoil will enable them to clear away the cobwebs, take a new lease on life, and have the inspiration to resume work again with a rejuvenated feeling of pleasure and happiness. Our patients like to have the example of good living typified in the person of their physician. Our health is the best asset we have. G. H. C.

WHAT NURSES ARE TAUGHT

One of the things that enters into the "nursing problem" is, what is she taught during her course of training? Is the teaching, especially the lectures given by the staff, in a direct line with her subsequent work? A reference to the outlines of the prescribed courses will strike one with the very evident high tone of the medical education obtained by the nurses—too high toned in fact for nurses.

A speaker at the opening of a new hospital wing, referring to the nursing staff, recently said, "They are well trained young ladies, their education is on a par with that of the medical student!" He unconsciously told a great truth. If one were to sit through a few lectures given to the nurses by the staff, the difference between them and those delivered in a medical college would hardly be noticed. All of this effort seems hardly in keeping with the end result, if it really is to be desired. Certainly a knowledge of the functional anatomy of the dorsal spinocerebellar tract of the spinal cord is not in any way going into the making of a better nurse. Nor is a study of blood chemistry going to enhance her value as a sick-room attendant. Examples could be given on and on as to the futility of this advanced teaching to general classes. The reading of a few answers to examination questions will enlighten anyone interested, as to just how far the words of the lecturer have penetrated.

Why continue the travesty? Why go on with the pretense of educating in medicine and surgery when it is apparent that no such thing is being accomplished and would be doing no good if it were. If there be any who conscientiously desire this so-called "advanced schooling," it could be had by taking part or the whole of a medical course and gotten right.

If these medical college lectures were eliminated and others specifically related to nursing substituted, certainly a good deal of time in training could be cut off. At the same time more hours could be given to real practical training in the wards, operating rooms and in the special departments. With the focusing of attention on the practical course, an improvement might be observed there.

The following two questions were asked in the course on "Hospital Housekeeping" in a leading Pennsylvania hospital: The first one was, "How much paint would be required to cover a room 12x13x9 feet?" The other was, "How long should a crate of oranges last?" One somehow gets the impression here that something is missing. Even a casual observer will see that there is a great lack of common sense. There also seems to be an attempt by somebody to give the appearance of great learning. But all of this is not getting us anywhere and it is not supplying the sick with the right kind of nurses.

There will always be a demand for a limited number of higher trained nurses, but this is all out of proportion to the number required to care for the great mass of sick people. A. J. S.

INSULIN OR ILETIN

The increasing number of reports of the use of iletin gives rise to a strong suspicion that iletin is being administered in cases that would be better off without it. Any case of diabetes that can be rendered sugar-free and acid-free and brought up to a maintenance diet sufficient for the enjoyment of life and the pursuance of an occupation, by the application of the Allen method or the modifications of Joslin or Woodyatt should not be given iletin except in an emergency. Such an emergency might be the necessity of a surgical operation or the sudden interference with carbohydrate tolerance, threatening acidosis and coma, as a result of an acute infection or other cause.

The indications for iletin, as at present recognized, are as follows: (a) Diabetes in children who cannot be properly nourished without it; (b) cases of diabetic coma; (c) cases in which the carbohydrate tolerance cannot be brought up high enough by simple dietetic treatment to make the individual physiologically efficient.

Iletin is an epoch-making addition to our medical armamentarium, but it should not be abused and it does not obviate a thorough practical knowledge of dietetics and the physiology of metabolism on the part of any physician who undertakes the treatment of diabetic cases.

L. L.

THE STUDY OF THE GALL-BLADDER BY MEANS OF THE ROENTGEN RAYS

Disease of the gall-bladder gives rise to more vague and indefinite symptoms than probably any other organ in the abdomen. Comparatively few cases give rise to the frank and classical symptoms that we learned when in college. Indefinite gas symptoms, and indefinite stomach symptoms are the most frequent.

Undoubted assistance can be obtained from the skillful use of the roentgen rays. In the cases with gall-stones, about twenty-five per cent can be definitely shown upon the x-ray plates or film. About twenty-five per cent more give indefinite shadows in the gall-bladder region, which evidence in itself is not sufficient for diagnosis, but when taken in conjunction with the clinical symptoms will make the diagnosis reasonably certain. This is true especially if a complete gastro-intestinal study has been made, and the stomach, duodenum, appendix and bowel have been found normal. Such a complete examination should always be made.

The demonstration of the gall-stones depends primarily upon the composition of the gall-stones, and mainly upon the calcium content. In addition, absolute stillness on the part of the patient is required. The stouter the patient and the more solid the tissues, the greater will be the difficulties. Because of the possibility of movement of the diaphragm, or movement of an adherent duodenum, it is necessary to make at least eight to twelve special films of the gall-bladder, so as to obtain one or more with no movement. A careful, and skillful technique is absolutely essential.

In addition to this direct evidence, which is of diagnostic value in about fifty per cent of cases, one can obtain indirect evidence by means of a careful study of the duodenum roentgenoscopically and roentgenographically. This has been especially emphasized by George, Cole and Burnham. This evidence consists of the pressure effect of an enlarged gall-bladder upon the bulb of the duodenum, or evidence of irregularity or angulation in the second part of the duodenum, caused by pericholycystic adhesions. This indirect evidence may be present in conjunction with gall-stones, but may also be formed independent of gall-stones. This indirect evidence should be found in an additional twenty-five to forty per cent of cases. This evidence is obtained best, but not exclusively, in the oblique prone position, and films should always be made in this position.

Therefore, by patient and skillful work, valuable evidence of gall-bladder disease can be obtained in from seventy-five to ninety-per cent of cases. If a reasonably complete abdominal study is made, the cause of the patient's symptoms will nearly always be found. G. E. P.

HOSPITAL STANDARDIZATION

Some years ago, when I first began to consider the question of hospital standardization, I felt that all hospitals had exactly the same problems, each owing a duty to the community, the medical student and the profession. Upon mature consideration I am now convinced that an obstetric hospital, or a general hospital with an obstetric department, must, in addition to the well established principles, go beyond those of the community who are sick and suffering, and reach the center of every home, searching out the prospective mother, establishing contact with her and maintaining an educational campaign to the extent that each and every birth will have been preceded by at least seven months of prenatal care by the doctor of her choice or a prenatal clinic.

The large majority of children always have, and always will be born in the homes of the people. They will largely be attended by physicians in the immediate neighborhood, and it is but fair to assume that in the very nature of things the neighborhood physician—the twenty-four-hour-a-day doctor—has a just claim to such cases as can properly compensate him for his time and expense, and are free from complicating pathology. Beyond this he cannot and must not go. His training and experience is not sufficient to warrant excursions into grave surgical conditions, even though the home technique be well adapted to the normal delivery.

If I am correct regarding the legitimate field of the general practitioner, it leaves for the trained obstetrician of the hospital, the poor and the cases of obstetrical pathology. By granting to the average physician this right, it is not intended that the obstetric errors of the past shall be repeated by each succeeding generation, or even be continued by indifferent or incompetent men now engaged in the practice of obstetrics.

Granting the correctness of my deductions, the obstetric hospital must minister to the poor of the community, surgically care for cases of obstetric pathology, train obstetric nurses, train the student to care properly for the normal and to recognize pathology, and last but not least, correct existing evils in the field of obstetrics as now practiced by the unskilled or incompetent practitioner of medicine.

The care of pregnant women begins with conception and continues to the end of the puerperal period. At the beginning the attendant must determine the fitness of the mother to sustain properly the increasing nutritional demands of the fetus; her ability to provide increased space for its growth and development, free from the unfavorable influence of encroaching tumor masses or latent inflammatory exudates. A careful search should be made for latent or active general conditions (focal infections, tuberculosis, syphilis, cardiac conditions), upon which the pregnancy may exert an unfavorable influence, or they in turn may result disastrously to the continued fetal development. The pregnant woman should be advised of the necessity of living within the limits of her body metabolism; that the presence of a pregnancy constitutes a temporary overload, which must be compensated for by a proper conservation of energy expenditure. A continued supervision of the maternal welfare, with a determination of the relative size of the passage and passenger, and corrections of unfavorable presentation, should constitute the minimum standard for prenatal care.

The delivery room technique of the majority of hospitals has undergone great improvement during the past decade. In many institutions complete disregard of the dangers of vaginal manipulations is still noted, such examinations being made solely to determine the progress of labor, when equally reliable information could be secured by abdominal palpation or rectal examination. This practice will continue until each examination, with its findings, is recorded, and staff conferences clearly demonstrate the increased safety, the decreased morbidity and mortality of the women not submitted to vaginal examinations. In the Magee Hospital we have a simple delivery room technique, printed and posted in several conspicuous places, to which the visiting physician usually cheerfully subscribes and practices, or eliminates himself after his first case. The use of forceps or other method of delivery is permitted, but we insist on recording the indication, and the delivery must be done in the presence, and with the assistance of the house physician.

Postpartum care is briefly outlined, with proper charts for recording the care of mother and baby. It is obligatory upon every physician to dictate his findings each day at such time as he visits the patient. Visiting physicians are invited to monthly staff conferences, where all mortality and morbidity occurring in the hospital during the past month, is reported and discussed. Naturally it is not a review of unqualified successes, nor are all the cases free from criticism. We avoid hardness and crudity, but give and receive such constructive criticism as a careful analysis of the case suggests, trying thereby to become more thoroughly familiar with obstetric pitfalls and dangers.

Visiting physicians (non-staff) are welcome to avail themselves of the entire facilities of the hospital, except the wards, which are reserved for teaching purposes. The hospital supplies neighboring physicians with every modern facility for the proper handling of cases, and such suggestions and instructions as are found to be of practical benefit, outlines a simple delivery room technique, provides competent nursing assistance, and insists on complete postpartum notes and a proper record of the patient's condition on discharge.

It is only by such constructive coöperation with the present-day practicing physician that opportunity can be afforded him to keep apace with the rapid advance of present-day obstetrics. Without progress on the part of the graduate physician, obstetric mortality and morbidity cannot be improved as rapidly as the situation demands. A desirable future addition, and I hope not a remote one, will be that every patient, when admitted, is accompanied by a full record of proper prenatal care.

In addition to the usual training, all obstetric nurses should be taught to observe and record the rate, character and location of fetal heart sounds at frequent intervals during the second stage of labor; strict adherence to the obstetric application of a proper surgical technique; the dangers of postpartum hemorrhage with its prevention and treatment, as well as a correct method of resuscitation and ophthalmic prophylaxis.

Students must attend prenatal clinics and be taught that no woman should be permitted to go into labor without pelvic measurements; correct determination of presentation and position; to depend largely upon abdominal palpation and rectal examinations to determine the progress of labor; that manual or instrumental deliveries should only be considered when definite indications exist; that injuries to the perineum large enough to see should be sutured; that the third stage of labor should be and usually is spontaneous, and that the invasion of the birth canal for any reason converts a normal physiological process into a potentially septic one.

Obstetrics always presents a new frontier and the task that lies before us is even greater than the accomplished facts of the past. Sterility, miscarriage, prematurity (both time and developmental) and the toxemias of pregnancy must be successfully combated. The ideal will only be reached when every woman, who so desires, may safely become the mother of living, healthy children. To this end the hospital must advance beyond being the "Human Repair Shop," and assume the responsibility for the propagation of the race, the safety of motherhood, and the future welfare of the child.

Our task is one of study and organization, and the favored few in each community willingly, or unwillingly, must be generous in the division of proper facilities and opportunity, to the end that all are competent with the normal and coöperative with the abnormal. Harold A. Miller.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

THE BUSINESS VALUE OF PERSONALITY

Some sixty-odd years ago two little boys were born, and they were as different as two boys could be. John was a scholar, a dreamer; Frank was a "go-getter." John was much the more scientific; he knew things—things that Frank never worried his brain about. John was interested in *things* and could discuss learnedly almost any subject under the sun—even subjects about which he knew very little—and he could write in a most interesting vein. Frank could tell the funniest stories you ever heard; he was interested in people and had a host of friends; and he had a perfect genius for getting what he wanted. John became well known in the literary world, but as a practitioner he never made a conspicuous success. Frank acquired a practice so large that he almost broke down under the strain of attending to it. John made a name for himself and remained poor to the end of his days; Frank made money. Both were men of ability; both were well educated; both were ambitious; both were successful—but in what different ways!

What, then, is the secret of success? What, in fact, is *success?* Whatever it may be from an idealistic point of view, from a business point of view it is the achievement of your ambition—the ability to get what you go after. And the secret of success is undoubtedly *personality.*

Personality is a curious thing, one of those almost-impossible-to-analyze things that is made up of a variety of characteristics. Yet, perhaps more than any other element in life, does it determine the place a man is to occupy in the economic order. Perhaps, according to Berman, in the not far distant future, we shall be able to regulate it at will. Just at present its regulation is a dangerous experiment, as witness the recent news of Ex-Kaiser Bill. Nevertheless, even though we may be able to develop a safe method of personality-regulation, the employment of it will of necessity be determined by the personality of the subject, for only those of a rather adventurous disposition would be likely to submit to the treatment.

However, this is of the future. The subject in which we at present are interested is how to utilize the personality with which each of us is endowed to further our own pursuit of health, wealth and happiness.

As with every other attribute of the human animal, personality must be trained. Even the most docile of us is not fit to perform in the circus of life without proper discipline and teaching. One cannot allow one's personality to grow wild, like a weed, without pruning at the proper seasons, without proper fertilization and cultivation, without support at its weak points and direction at its strong points. This training should be begun before the child has left the cradle (or the more modern crib!) and should never cease until he has drawn his last breath (perhaps it will not cease even then, if Sir Conan Doyle is correct!). The best trainer is the owner of the personality, but his chief assistants are the other human beings with whom he comes in contact, strongly reinforced by the events of life, which are constantly exerting their benevolent disciplinary influence.

We are accustomed to thinking that the personality is what it is; that it cannot be changed. This is wrong. It is all a question of whether or not we *want* it changed. If a man craves the love and admiration of his fellow men, he will surely make every effort to suppress the unlovely and unadmirable traits in his character, he will certainly try at least to make others think he is interested in them—even though the effort may be a strain on his disposition—and the effort will actually tend to make him what he wants to seem to be. It all depends on what we want out of life. If it is financial success we are after, it is surprising how one's personality may be bent to attain that goal. If it is just plain happiness and a sense of well-doing, which after all is probably the greatest reward man can have, it is not difficult to incline oneself in that direction. If it is attainment in the scientific, the literary world, or what you will, it is possible to train the personality to assist in gaining whatever it is we wish most. It is all a matter of desire. What we want bad enough, we can usually attain.

So, do not neglect your personality. It is one of the most valuable adjuncts to success that is in your reach—and you *can make it what you will.* Train your personality, and you will never regret the effort. M. S. B.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

AFFILIATE MEMBERSHIP

The Board of Trustees at their May meeting recommended the creation of a new form of membership in our Society to be known as Affiliate Membership. This proposed addition to Article 4 of the Constitution will not in any way disturb the present forms of membership in the Society. This new plan is suggested in response to numerous requests from component county medical societies that a provision be made for certain members of such societies who have been active members for many years but who for good reasons desire to withdraw from active membership and at the same time retain some connection with the Society. The proposed amendment will be found on page 624 of this issue of the JOURNAL and will be acted upon by the 1923 House of Delegates. A careful study of the proposed amendment will demonstrate that while the privileges of Affiliate Membership are limited, they will at the same time permit an inactive physician to continue connection with his society and maintain affiliate membership in the American Medical Association. It should be borne in mind, however, that members who contribute any dues in any form to a component society will not be eligible for affiliate membership.

RESOLUTION

The Board of Trustees at their May meeting adopted the following resolution and ordered the same to be spread upon the minutes of the meeting:

IN MEMORIAM

CYRUS LEE STEVENS, M.D.

WHEREAS, The long and distinguished earthly career of Cyrus Lee Stevens is completed, we fully realize that a source of strength and inspiration has been cut off.

Dr. Stevens was a mighty influence in the highest developments of the organized medical profession in Pennsylvania during the last quarter of a century. For twenty-one years, while serving as Secretary of the Medical Society of the State of Pennsylvania, he served with its Board of Trustees.

The impress of Dr. Stevens as an educator, physician, humanitarian and faithful officer may be found throughout many of the records of our Board, and his influence for the best in the future development of the high purposes of our Society will continue through many years to come.

Therefore, be it resolved, That we express our deep sorrow for the loss of this true physician and wise counselor.

DONALD GUTHRIE,
THEODORE B. APPEL,
WALTER F. DONALDSON.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to May 19th:

ALLEGHENY: *New Members*—David Lipschutz, 1541 Center Ave.; Philip E. Schmidt, Children's Hospital, Pittsburgh. *Transfers*—Andrew G. Opinsky, New Kensington, from Fayette County Society; John W. Ildza, 1431 Woods Run Ave., N.S. Pittsburgh, from Washington County Society; Norman C. Ochsenhirt, 1417 Adams St., Pittsburgh, from Beaver County Society. *Resignations*—Milton Bachman, Youngstown, O.; Claude L. Bradford, Pittsburgh; William S. McCausland, Chula Vista, Calif.; Frederick A. Rhodes, Los Angeles, Calif.

CAMBRIA: *Transfer*—Charles C. Custer, Cresson, to Franklin County Society. *Removal*—Elmer E. Geissler from Nanty Glo to 9 Shady Lane, Johnstown.

CLEARFIELD: *New Member*—Nora M. McNerney, Du Bois.

CRAWFORD: *Death*—Robert N. Greenfield, Penn Line (Univ. of Mich. '69), March 11, aged 83.

DAUPHIN: *New Member*—Albert H. Bucher, 512 N. Second St., Harrisburg. *Removal*—William P. Evans, from Emaus to 101 E. Post Road, White Plains, N. Y.

ERIE: *Suspended*—Carl B. Lininger, Erie.

FRANKLIN: *New Member*—Max M. Teplitz, State Sanitorium, South Mountain, P. O.

LACKAWANNA: *New Members*—Walter L. Diller, Nicholson; M. B. Finneran, Carbondale. *Reinstated Member*—R. V. White, Brooks Bldg., Scranton.

LANCASTER: *New Member*—Samuel N. Park, Kirkwood.

Lehigh: *Resignation* — Jeremiah F. McAvoy, Catasauqua. *Removal*—Lawrence H. Bloom, from Allentown to Phillipsburg, N. J.

Luzerne: *Removal*—John F. Connole, from Plymouth to 587 Carey Ave., Wilkes-Barre.

Lycoming: *Removal*—Harry C. Fuller, from Jersey Shore to 2301 Ligonier St., Latrobe (West. Co.).

Montgomery: *New Member*—Albert Schafenacker, North Wales.

Mercer: *Removal*—Frederick C. Potter, from Mercer to Peoples Hospital, Akron, O.

Northampton: *New Member*—Edward C. Oestereicher, 73 W. Ettwein St., Bethlehem.

Northumberland: *New Member*—Roy B. Bast, Kulpmont.

Philadelphia: *New Members*—Thad L. Montgomery, 1426 Spruce St.; Maxwell Cherner, 1939 So. Sixth St., Philadelphia. *Removal*—Stanley E. Biddle, from Philadelphia to 1200 Fayette St., Conshohocken (Montg. Co.); Francis X. McCarthy, from Philadelphia to Conshohocken (Montg. Co.) *Deaths*—Henry N. Speer of Philadelphia (Jeff. Med. Coll. '93), April 19; William W. Stevens of Philadelphia (Ensworth Med. Coll., Mo., '92), April 21, aged 62.

Susquehanna: *New Member*—Franklin A. Stiles, Great Bend.

Schuylkill: *New Members*—James Gray, Cressona; William J. O'Neill, Ashland.

Tioga: *Death*—Clarence W. Webb (Coll. Phys. & Surg., Baltimore, '79), of Wellsboro, Feb. 5, aged 68.

Washington: *New Member*—Samuel A. Kamerer, Cokeburg. *Removal*—J. A. Gormley, from Canonsburg to Washington Trust Bldg., Washington.

Warren: *Death*—Willis M. Baker of Warren (Univ. of Buffalo '78), recently, aged 66.

Westmoreland: *New Member*—James H. Fiscus, Cope Bldg., Greensburg.

York: *Death*—Isaac C. Gable of York (Univ. of Penna. '77), April 12, aged 74.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since April 19th. Figures in first column indicate county society numbers; second column, State Society numbers.

April 20	Montgomery	152–153	6957–6958	$10.00
	Luzerne	223	6959	5.00
	Snyder	9	6960	5.00
	Lancaster	107–112	6961–6966	30.00
	Wayne	20–21	6967–6968	10.00
April 21	Lawrence	52	6969	5.00
	Tioga	27	6970	5.00
April 23	Mercer	70	6971	5.00
	Bradford	45–47	6972–6974	15.00
	Erie	131–133	6975–6977	15.00
	Northampton	128–130	6978–6980	15.00
	Philadelphia	1826–1850	6981–7005	125.00
April 24	Northampton	131–133	7006–7008	15.00
April 25	Dauphin	154	7009	5.00
April 26	Beaver	61	7010	5.00
	Wayne	22	7011	5.00
April 27	Luzerne	224	7012	5.00
	Allegheny	1204–1217	7013–7026	70.00
April 28	Mercer	71	7027	5.00
	Wayne	23	7028	5.00
April 30	Beaver	62	7029	5.00
May 1	Westmoreland	148–149	7030–7031	10.00
May 2	Westmoreland	150	7032	5.00
	Wayne	24	7033	5.00
May 3	Lackawanna	218–223	7034–7039	30.00
	Northumberland	55–58	7040–7043	20.00
	Venango	51	7044	5.00
	Schuylkill	122–125	7045–7048	20.00
	Northumberland	59–60	9049–7050	10.00
	Dauphin	155–156	7051–7052	10.00
	Lehigh	105–107	7053–7055	15.00
	Westmoreland	151	7056	5.00
May 4	Lancaster	113–114	7057–7058	10.00
May 5	Lawrence	54–55	7059–7060	10.00
	Susquehanna	18	7061	5.00
May 7	Erie	134	7062	5.00
	Luzerne	225–227	7063–7065	15.00
May 8	Philadelphia	1851–1862	7066–7077	60.00
May 10	Center	25–26	7078–7079	10.00
	Somerset	46	7080	5.00
May 12	Luzerne	228	7081	5.00
	Venango	52	7082	5.00
	Washington	119–120	7083–7084	10.00
May 14	Clearfield	66	7085	5.00
	Luzerne	229	7086	5.00
	Franklin	52	7087	5.00
May 15	Cambria	136	7088	5.00
May 17	Venango	53	7089	5.00
	Montgomery	154	7090	5.00
	Northampton	134	7091	5.00
	Allegheny	1219–1222	7092–7095	20.00
May 21	Venango	54	7096	5.00

PROPOSED AMENDMENT TO THE CONSTITUTION AND BY-LAWS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

As per the requirements of Article XII of the Constitution, the following proposal for alteration is published in the Journal of this Society three months before the next annual session.

Article 4 of the Constitution to be amended by adding the following as Section 9:

A member of this Society who has been a member for a continuous term of fifteen years, who is not less than sixty-five years of age, may on request of his component county medical society be made an Affiliate Member provided he holds such membership in his component society as shall relieve him from the payment of dues in his component society. A component society shall not be required to pay any annual assessment for an Affiliate Member. Affiliate Members shall be privileged to participate in the scientific discussions of this Society; they shall not receive the Journal of the Medical Society of the State of Pennsylvania, except by personal subscription; nor shall they be entitled to any benefit from the Medical Defense Fund.

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg

LEGISLATION

Workmen's Compensation Act

In the April number of the Atlantic Medical Journal was published House Bill 846. This bill is an amendment to the Workmen's Compensation Act of 1915 amending section 306, paragraphs E and F. Since its introduction many hearings have been held and conferences conducted for the purpose of arriving at some agreement with the insurance carriers, and as a result of these conferences the bill has been amended, reducing the amount of compensation and the length of time of treatment, both for the surgeon and the hospital, to the thirty days, which is now the present law. There are but a few differences which are still contended by the insurance people, viz., the separation of the hospital charge from the charge of the surgeon, the right of party in interest in any proceedings had or begun under the provisions of the Act and the remuneration for services rendered during the first ten days in case of death of employee.

We want to bring to the attention of the industrial surgeons of the State that unless more active interest is taken in this measure and influence brought to bear upon the members of the House and Senate, it is doubtful if this bill as amended will pass because of the strong influence against it. We would appeal to those who are anxious to have these changes incorporated that they exert their influence, because no amount of work by the Medical Legislative Conference would compare with what could be accomplished by the members in each county if they would use their influence with their individual representative and senator.

Chiropractic Bill

In the April number of the Journal we reported that House Bill No. 36, known as the Chiropractic Bill, had not made any further progress. Since that time the bill has been reported out of the Committee as amended and defeated on the floor of the House. Subsequently, a resolution was introduced placing the bill back upon the calendar, which prevailed, and under special order of May 21st the bill was brought up for consideration and final passage for the second time. The vote of the House was 78 for the bill and 95 against it, and as a result the bill fell. This closes the chapter on chiropractic legislation for the Session of 1923.

Osteopathic Bill

Senate Bill 242 to license osteopathic surgeons has passed the Senate and has been referred to the Committee on Health and Sanitation of the House. The provisions of the bill were set forth in the May issue of this Journal and it is unnecessary to repeat them except to say that in the final amendment to the bill the inspection of colleges and hospitals teaching osteopathic surgeons was inserted.

Other Bills

House Bill 395 to regulate the sale of caustic acid and caustic alkalies is now a law, having been signed by the Governor. This bill is of special advantage in that it will tend toward reducing the number of cases of accidental poisoning from household lye and other caustic poisons. Every package must contain a poison label in bold type.

Senate Bill 586, known as the "Code," has passed the Senate after numerous amendments, but we regret to note that the provisions relative to the Bureau of Medical Education and Licensure remain as originally introduced. It seems that the amount of work which the Bureau is required to accomplish, and which it now does under a salary system, is not thoroughly understood. Under the provisions of the Code which says "Each member of the Board other than the Superintendent of Public Instruction and the Secretary of Health shall receive $15.00 per diem while actually engaged in the work of the Board," it will probably be difficult to obtain the same class of service for this amount as has been given by the members of the Bureau under a salary system. The name of the Bureau will be changed to the "State Board of Medical Education and Licensure" under the same provisions as existed in the Bureau of Medical Education and Licensure. There is, however, a great opportunity in the administration of the Code to use this enabling legislation to reduce the efficiency, provided the proper interference be put forth to restrict the action of the Board.

COMMUNICATION

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: We present herewith the names of the committees and their chairmen elected by the Allegheny County Medical Society to serve for the 1923 Session:

Transportation Committee—Dr. John A. Hawkins, Chairman.

Editorial and Publicity Committee—Dr. Edward B. Heckel, Chairman.

Hotel Committee, for the reservation of rooms, rates, etc.—Dr. I. H. Alexander, Chairman.

Entertainment Committee for Tuesday evening—Dr. H. G. Schleiter, Chairman.

Clinics—Dr. E. E. Mayer, Chairman.

Exhibits—Scientific and Pathological—Dr. Samuel R. Haythorn, Chairman.

Ladies' Committee—Mrs. Chas. Aufhammer, Chairman.

Thursday Evening Entertainment—Dr. James D. Heard, Chairman.

Members desiring hotel reservations should either write direct to the hotel stating that they are making reservation for the Session, or to Dr. I. H. Alexander, Chairman of the Hotel Committee, who will assign reservations. Reservations should be made early in order to secure desirable rooms.

Very truly yours,
Harold A. Miller, Chairman,
Committee on Arrangements.

COUNTY MEDICAL SOCIETIES

ADAMS—James P. Dalbey, M.D., Gettysburg.
ALLEGHENY—Lester Hollander, M.D., Pittsburgh.
ARMSTRONG—Jay B. F. Wyant, M.D., Kittanning.
BEAVER—Perry Clare Smith, M.D., Ambridge.
BEDFORD—N. A. Timmons, M.D.,Bedford.
BERKS—Clara Sbetter-Keiser, M.D., Reading.
BLAIR—James S. Taylor, M.D., Altoona.
BRADFORD—C. L. Stevens, M.D., Athens.*
BUCKS—Anthony F. Myers, M.D., Blooming Glen.
BUTLER—L. Leo Doane, M.D., Butler.
CAMBRIA—Joseph J. Meyer, M.D., Johnstown.
CARBON—Jacob A. Trexler, M.D., Lehighton.
CENTER—James L. Seibert, M.D., Bellefonte.
CHESTER—Henry Pleasants, Jr., M.D., West Chester.
CLARION—Sylvester J. Lackey, M.D., Clarion.
CLEARFIELD—W. E. Reiley, M.D., Clearfield.
CLINTON—Clair B. Kirk, M.D., Mill Hall.
COLUMBIA—C. B. Yost, M.D., Bloomsburg.
CRAWFORD—Cornelius C. Laffer, M.D., Meadville.
CUMBERLAND—Calvin R. Rickenbaugh, M.D., Carlisle.
DAUPHIN—W. Minster Kunkel, M.D., Harrisburg.
DELAWARE—George B. Sickel, M.D., Chester.
ELK—Samuel G. Logan, M.D., Ridgway.
ERIE—Anna M. Schrade, M.D., Erie.
FAYETTE—Hugb Ralston, M.D., Uniontown.
FRANKLIN—Samuel D. Shull, M.D., Chambersburg.
GREENE—Tbomas B. Hill, M.D., Waynesburg.
HUNTINGDON—John M. Keichline, Jr., M.D., Huntingdon.
INDIANA—H. Boydson Smith, M.D., Blairsville.
JEFFERSON—W. A. Hill, M.D., Reynoldsville.
JUNIATA—W. H. Banks, M.D., Mifflintown.

LACKAWANNA—G. A. Clark, M.D., Scranton.
LANCASTER—J. Sullivan, M.D., Lancaster.
LAWRENCE—William A. Womer, M.D., New Castle.
LEBANON—John C. Bucher, M.D., Lebanon.
LEHIGH—Victor J. Gangewere, M.D., Allentown.
LUZERNE—H. Irvin Evans, M.D., Ashley, Pa.
LYCOMING—Wesley F. Kunkle, M.D., Williamsport.
MCKEAN—Francis DeCaria, M.D., Bradford.
MERCER—M. Edith MacBride, M.D., Sharon.
MIFFLIN—F. A. Rupp, M.D., Lewistown.
MONROE—William R. Levering, M.D., Stroudsburg.
MONTGOMERY—John C. Simpson, M.D., Norristown.
MONTOUR—John H. Sandel, M.D., Danville.
NORTHAMPTON—Wm. A. Finady, M.D., Bethlehem.
NORTHUMBERLAND—Charles H. Swenk, M.D., Sunbury.
PERRY—A. R. Johnson, M.D., New Bloomfield.
PHILADELPHIA—Franklin M. Crispin, Philadelphia.
POTTER—F. Gurney Reese, M.D., Coudersport.
SCHUYLKILL—Arthur B. Fleming, M.D., Tamaqua.
SNYDER—Percival J. Herman, M.D., Selinsgrove.
SOMERSET—H. Clay McKinley, M.D., Meyersdale.
SULLIVAN—P. G. Biddle, M.D., Dushore.
SUSQUEHANNA—Robert D. Mackey, M.D., Montrose.
TIOGA—H. A. Vosburg, M.D., Arnot.
UNION—Oliver W. H. Glover, M.D., Laurelton.
VENANGO—John F. Davis, M.D., Oil City.
WARREN—M. V. Ball, M.D., Warren.
WASHINGTON—Charles C. Cracraft, M.D., Claysville.
WAYNE—Hugh Stevenson, III, M.D., Honesdale.
WESTMORELAND—W. J. Walker, M.D., Greensburg.
WYOMING—Herbert L. McKown, M.D., Tunkhannock.
YORK—Gibson Smith, M.D., York.

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* Deceased.

JUNE, 1923

COUNTY SOCIETY REPORTS

CENTER—MAY

The meeting of the Center County Medical Society, commemorative of its fifty-second anniversary, was held at the Nittany Country Club, seven miles east of Bellefonte, on the 9th inst., and at which we had the pleasure of having present Dr. Lawrence Litchfield, of Pittsburgh, and Dr. Howard C. Frontz, of Huntingdon, President and President-Elect, respectively, of the Medical Society of the State of Pennsylvania, together with a number of physicians from Huntingdon and Clinton counties.

Dr. Litchfield addressed the meeting on the subject of "Some of the Diagnostic Problems of the General Practitioner," dwelling especially on those of a neurological character, emphasizing the use of the opthalmoscope in general practice and acquaintance with normal and abnormal appearance of the fundus of the eye (particularly choked disc) and significance of the latter. He stated that tumors of the brain and spinal cord were much more frequent than is generally supposed; that tumors of the brain, after those of the breast and uterus, were more frequent than of any other organ of the body, and described the symptomatic sequences of cord and brain tumors in relation to their location in these organs, viz., local motor and sensory disturbances. Symptoms of encephalitis and Parkinson's disease were differentiated, and also their resulting tremors.

The discussion on Dr. Litchfield's paper was opened by Dr. Frontz, who laid special stress on the present-day hospital conveniences, which are open to the rural as well as the urban physician, to help him in his diagnostic problems if he will avail himself of the opportunity. The discussion was continued by Drs. Cloyd G. Brumbaugh and John Keichline, of Huntingdon, and Drs. J. S. McGhee, D. W. Thomas and John B. Critchfield, of Lock Haven.

The meeting was an exceptionally interesting one, and to the general practitioner of great benefit.

At the close of the meeting an invitation to the dining room was extended, where twenty-five doctors sat down to a bountiful and deliciously prepared banquet which was enjoyed by all.

J. L. SEIBERT, M.D., Reporter.

ERIE—MAY

Following is an abstract of the address delivered before the Erie County Medical Society by George B. Roth, M.D., Cleveland, Ohio, on May 1, 1923:

THE ARSPHENAMINES; THEIR DEVELOPMENT AND NATURE

The several steps leading up to the development of the modern organic arsenical antisyphilitic agents were traced.

The cacodylates and arsanilates are of minor therapeutic importance as compared with the arsenobenzol type of organic arsenicals.

The principle representatives of the arsenobenzol type include arsphenamine (salvarsan), sodium arsphenamine, neoarsphenamine, phospharsenamine, silver arsphenamine and sulpharsphenamine. Whether sodium arsphenamine, phospharsenamine, silver arsphenamine and sulpharsphenamine represent distinct improvements over arsphenamine and neoarsphenamine cannot be answered at the present time.

Although closely related chemically, arsphenamine and neoarsphenamine were shown by biological and physicochemical tests, to be distinctly unlike. Arsphenamine was found to be relatively more stable while in ampule and under certain other procedures, than neoarsphenamine.

Shaking solutions of neoarsphenamine in the presence of air, increased their toxicity markedly. It was shown that arsphenamine alkalized according to the Ehrlich method, namely by adding sodium hydroxid to the point of clearing, was decidedly more toxic than when alkalized by following the procedure recommended in the standard instructions recently issued by U. S. Public Health Service. (Reprint 774, U. S. Public Health Reports, August 4, 1922. This may be obtained upon application from the Surgeon-General, U. S. Public Health Service.)

It was shown by animal experiments that the above mentioned standard instructions for the preparation and administration of arsphenamine and neoarsphenamine should be adhered to strictly, to insure relative freedom from untoward results.

The age of the recipient was shown to be a factor in modifying the toxicity of arsphenamine, as evidenced by the fact that young, immature experimental animals were found to be more tolerant to arsphenamine than the older more mature animals. This suggests that in clinical practice the dose of arsphenamine for infants need not be proportionately smaller than the dose for the adult.

Inasmuch as all arsphenamines are tested in the U. S. Hygienic Laboratory, Washington, D. C., before being released for interstate commerce, all lots encountered which have shown evidence of unusual toxicity or deterioration, should be reported to the director of the above named laboratory, and with the report should be included several samples of the lot in question in order that a reëxamination may be made of the material. Anna M. Schrade, M.D., Reporter.

LUZERNE—APRIL-MAY

The regular meeting of the Luzerne County Medical Society was held in the Medical Building and was called to order by President N. L. Schappert, April 4, 1923, at 8:40 p. m.

Dr. Albertson discussed several of the bills, which are going before the Legislature in the near future.

Dr. H. B. Gibby spoke on Diphtheria Week, and announced that in this district the week of April 23d to 28th would be designated as "Diphtheria Week." He gave out the plans for getting this subject before the public.

Dr. H. A. Fischer reported for the Committee on "Practice of Medicine and Surgery."

Dr. L. C. Mundy read a very interesting paper on "The Susceptibility to Pneumonia of Patients Operated Upon With Lesions in the Upper Abdominal Region." The paper was discussed by Drs. Trapold, Mengel, Sheridan, Schiefly and Long. Discussion was closed by Dr. Mundy.

On April 18th the meeting was held in the Society Building, and was called to order by President Schappert at 8:40 p. m.

Dr. Drake reported for the Program Committee.

Dr. J. W. Davis announced clinics at the Mercy and City Hospitals on April 30th and May 1st, under the program of the American College of Surgeons.

Dr. E. A. Adams read a very interesting paper on "Skin Grafting." This was discussed by Drs. Ahlborn, Drake and Walter Davis. Discussion was closed by Dr. Adams.

Dr. Lewis H. Taylor spoke briefly about his recent trip to South America, describing the splendid hospitals which they had seen in the various cities.

The regular May meeting was held in the Society Building on the 2d, and was called to order by President Schappert at 8:40 p. m. There were 80 members and three visitors present.

Dr. Drake reported for the Program Committee, announcing that Drs. Jackson and Pike, of Danville, Pa., would read papers before the Society on June 6th.

A communication from Dr. Howard C. Frontz, President-Elect of the State Medical Society regarding a survey of physicians in the rural districts was taken up, and referred to the Committee on Practice of Medicine and Surgery.

Dr. Astley P. C. Ashhurst, Visiting Surgeon to the Episcopal Hospital, and Associate in Surgery in the Medical Department of the University of Pennsylvania, was the speaker of the evening, and gave a very instructive talk on "The Operative Treatment of Fractures," also showing many stereopticon slides of the same.

At a special meeting of the Society on May 9, 1923, Dr. Clark Yeager, State Director International Health Board, and a former member of our Society, gave an interesting talk and showed motion pictures of oriental customs, which was very much appreciated by all the members. H. Irvin Evans, M.D., Reporter.

MONTGOMERY—APRIL

At the April meeting of the Montgomery County Medical Society, Dr. Harry B. Wilmer presented a "Report of a Series of Cases of Asthma, With Special Reference to Diagnosis and Treatment," abstract of which follows:

The purpose of this paper is, if possible, to demonstrate to you how valuable the cutaneous test may be in diagnosing the cause of asthma, and in treating the disease.

The results of a number of experiments by various men show that protein applied to the upper respiratory tract of a sensitive animal irritates the constrictor fibres of the vagus, producing stenosis of the small bronchi by causing a spasm of their circular muscles. The mechanism of a typical attack of true asthma is thus explained.

If the following rules are adhered to religiously, a diagnosis can be made in from 55 to 70 per cent of cases: 1, A thorough and exhaustive history must be taken; 2, the patient should be thoroughly questioned as to previous medical history; 3, a complete x-ray study of the sinuses should be made, especially if headache is a constant symptom; 4, if there are symptoms of nasal obstruction, or if there is constant sneezing accompanying the attack, a thorough nasal and laryngeal examination should be requested; 5, a thorough cutaneous test with all the proteins and pollens should be performed. If a case does not react to any protein or pollen, it has been my practice to classify that case as a bacterial case until proved otherwise.

For the sake of convenience in diagnosis, causes of bronchial asthma may be divided into the following groups: 1, *The thermal type*, in which the patient complains of the attacks occurring upon leaving a warm room and going into the cold, or vice versa; 2, *the chemical type*, in which an attack is developed upon inhaling any pungent odor; 3, *the neurotic and atmospheric type*, in which attacks are precipitated by any emotional outbreak or by any sudden change of atmospheric pressure; 4, *the pollen type*, the cause of which may easily be determined by the cutaneous test; 5, *the animal, epidermal and food protein type;* 6, *the bacterial type*, in which the cutaneous test is negative throughout. There is no doubt in my mind that a bacterial sensitivity may be engrafted upon or may be the direct cause of asthma in any of the foregoing types classified above.

The treatment of the thermal and chemical types is practically the same. If the cutaneous test shows a positive reaction to any of the animal proteins, it is my habit to give first 10 grs. of potassium iodid, t.i.d. for three or four days. An autogenous bacterin is then made and the offending animal protein is injected in ascending doses. If after a period of three or four weeks, there is no sign of relief, the bacterin is given in conjunction with the protein extract every five days. In the pollen type the treatment is the full course of injections of the offending pollen. In stubborn cases of long standing, an autogenous vaccine is made from the sputum or from the nasal mucous membrane, and the bacterin is used in conjunction with the pollen extract injections, with most satisfactory results.

In the protein type where the asthma has been the result of some food protein, the offending food should be immediately removed from the patient's diet. In the animal protein type it is usually customary to remove the offending protein, although desensitization is sometimes employed. I have not had to use a bacterin in the treatment of any of these cases.

In the bacterial type the treatment is not so encouraging, as the results are variable. The patient is given a saturated solution of potassium iodid, and is instructed to take grs. 15, t.i.d., for at least a week. The sputum is then collected and cultured and all organisms showing in the culture are used in making the bacterin. The bacterin is then made up in a dosage of minims, and each minim contains approximately 1 to 2 million organisms. The injections are given every four days, increasing a minim a dose.

In connection with the paper, illustrative cases were described. John C. Simpson, M.D., Reporter.

PHILADELPHIA

April 11th

Dr. David Riesman, president, in the chair.

Dr. H. C. Masland: Demonstration of a "To and Fro Bone Saw."—The to and fro bone saw is a part of a general equipment, and consists of a circular saw with an inside guard and an outside guard to regulate the depth of the cut when needed. It is a perfectly safe instrument. The rotating tool will take any rotating instrument which can be attached at the handle.

Dr. Masland also demonstrated splints he devised to appreciate the mechanical supports available above and below the fracture and to utilize them to distribute the strains. These splints are fairly comfortable, and will bring the arm or leg to absolutely normal length. Any structure desired can be built up on the limb, and all splints can be so constructed that the joints can be moved merely by moving the sleeves and marking how far they overlap.

A splint for fractured patellar bones consists of end plates, which are buried in plaster of Paris, and a cross piece which can come down by loosening the screws on the sides. The jaws can be bent in and out to engage but not pinch the patella. When everything is together, it is tightened up, and a piece of adhesive is put between the cross bars to hold them together. The knee joint can be manipulated without disturbance of sensation.

Discussion by Dr. Roberts: Dr. Masland is an expert, and his saw is a wonderful thing. His craniotomy saw is a great success.

Dr. Riesman: Various causes for influenza were assigned during the recent epidemic, none of which have been satisfactory. The work of the Rockefeller Institute has been attracting world wide attention, and Drs. Olitsky and Gates are pioneers in the work, achieving unusual results.

Dr. Peter K. Olitsky: "Investigations on the Bacteriology of Epidemic Influenza."—Dr. Olitsky gave a brief outline of the work done by Dr. Gates and himself during the past four and a half years, in connection with the Rockefeller Institute for Medical Research.

Epidemic influenza is a mild disease, and does not in itself cause fatalities, but reduces the resistance to secondary infections, especially of the lungs, which are invariably fatal. The mode of infection is by human contact, which fact Rosenau and McCoy firmly believe, although they failed in their attempt to convey influenza to normal persons from droplet infection. A complete study of influenza when it first appeared was impossible because of the exigencies of the war, poorly equipped laboratories, inadequate personnel, a misconception of the nature of the disease, leading to the study of pneumonia, and the prejudice in favor of Pfeiffer's bacillus. The latter occurred secondary to other infections, as measles, as often as influenza; is found to be a normal inhabitant of the respiratory tract, and was not found in early cases. The pandemic nature of influenza expostulates a single cause, and its rapid spread would indicate a single factor. The striking features of the disease are the constant leucopenia, affecting the mononuclear types, the increased susceptibility to secondary infections, especially of the upper respiratory tract and lungs, and thirdly, the extreme prostration and subsequent depression.

In September, 1918, work was begun on the hypothesis that the virus was present in the nasopharyngeal secretions. The usual methods of cultivation were hopeless. Filtered and unfiltered nasopharyngeal secretions were injected into monkeys, but the results were untrustworthy since the monkeys were infected with tuberculosis. First experiments with rabbits were failures, the later ones more successful, when the infections were made in the first thirty-six hours of the disease. The rabbits showed leucopenia, a rise in temperature, conjuntivitis, and in the lungs emphysema, edema, hemorrhage, but no consolidation. When cultivation studies were made, definite multiplying organisms were found that corresponded in effect with the nasopharyngeal secretions of influenza.

(Slides were shown to illustrate the growth in the medium, and the effects in the animals, especially the emphysema and edema of the lungs. The organisms are very minute.)

When it came to a question of possible antibody production, the work was handicapped because the media contained protein and antigens besides the organisms. A dialysate medium, used by Noguchi, was accordingly devised. Acidic fluid, containing fresh kidney tissue, was put into a colloidial sac, with distilled water or broth on the outside, sealed with vaseline. Inoculation was made through the seal. Using such media, it was found that rabbits could be immunized. Three repeated injections of killed cultures subcutaneously in rabbits produced antibodies. Agglutination in man is still an experiment. Low titre is expected.

Discussion by Dr. A. C. Abbot: Drs. Olitsky and Gates have to the present time given the most satisfactory etiology for influenza, but it cannot be said they have given the last word. Pfeiffer's bacillus can no longer be taken seriously, as there are too many postulates unsatisfactory. Influenza itself is mild, but so is scarlet fever if there are sufficient antibodies to destroy the organisms in the throat.

Dr. R. C. Rosenberger: Reference is made to the similarity between influenza and pneumonic bubonic plague. All respiratory organisms have been blamed. Agglutination, precipitation and immunity tests point to a bacteriological body, a microörganism.

Dr. Paul A. Lewis: The organism, if found, will not tell much about the disease, and influenza must long remain a mystery. Why are some cases followed by extremerly fatal pneumonia? The work of Drs. Olitsky and Gates has been exceptionally fine and painstaking, and makes the strongest presumptive evidence of the etiology of influenza we have.

Dr. D. H. Bergey: Are the Pfeiffer bacillus and Dr. Olitsky's organism separate organisms in the same disease? Comparative studies will clear up this matter.

Dr. Olitsky: Three other groups of organisms, about twenty strains, bearing on influenza but not "pneumocintes" have been found. The presumption is that the pathological type is pneumocintes. It is not found in normal throats nor in common colds. Bronchopneumonia is produced instead of influenza by the Pfeiffer bacillus. Our organism never produces pneumonia, and the two are distinct serologically and morphologically.

These reports are objective findings, and are not statements as to the definite cause of influenza. Additional work must first be done, and the interpretation is still open for discussion.

Dr. Fred B. Weidman: "Tumors from Camphorated Oil and Other Oil Injections."—Paraffin has been used for cosmetic purposes, but has been abandoned because of the results of its use in producing tumor-like masses. Paraffin oil will also produce these results, whether hard or soft paraffin is used. The tumors are not genuine neoplasms, but a reaction of the tissues against a foreign body, and are progressive in character. The only treatment is surgical. Proprietary drug houses have been advised of the danger of paraffin oil injection, and saponified oils, cocoa butter, sweet almond, etc., are now available. Syphilitic treatments are as effective if suspended in readily absorbable oils. Paraffin is evidently not a bland, inert substance. Experimental tumors have been produced in monkeys, as definite inflammatory reactions against paraffin oil in the tissues.

In conclusion, since other oils are available, a suspension of insoluble salts should be used only in more absorbable oils.

April 25th

Dr. Philip F. Williams: A Survey of Prenatal Care in Philadelphia, and What We Should Do."—Dr. Williams pointed out on a map the location of prenatal clinics in Philadelphia, showing that some districts, especially the central portion, are over supplied, while others are lacking. There is little zoning in Philadelphia, Mercy Hospital for instance, taking in a large territory, although some districts are well defined. The map showed the necessity for more clinics out towards Torresdale, and for closer rules for zoning in the down town clinics. Dr. Williams also gave statistics to show the result of the work in these clinics. In the last two years there has been a drop in puerperal deaths, but the fatalities in eclampsia are not less than in 1911, probably because of the poor facilities for delivery. Toxemia is preventable if recognized, and the patient should be seen frequently, and more routine blood-pressure taken. An early physical examination should be made, with pelvic measurements, and the urine and blood-pressure taken regularly. A Wassermann might be taken in suspected cases. The nutrition and diet of the patient together with the hygienic conditions of the home should receive careful consideration.

Dr. Harriet C. Hartley: "A Study of Prenatal Care in Philadelphia from the Point of View of Child Welfare Organization."—The Welfare and Hygiene Organization has a prenatal program for reducing infant mortality, and a survey is made each year to ascertain the work of prenatal clinics, Thirty-five per cent of private physicians give prenatal care. Statistics of three maternity hospitals in the city, which give full prenatal care, show a mortality of forty per ten thousand cases, and those fatalities were almost all emergency cases, unknown until labor. Private physicians are showing more interest in their cases, and frequently seek the coöperation of prenatal agencies. Midwives, too, have more desire to coöperate with health centers each year. In the prenatal areas, there are fifteen per thousand cases of infection, while in the city at large there are thirty per thousand. The rate of stillbirths in prenatal areas is one-half that of the city at large. Mortality rates would decline if there were proper registration of births and stillbirths, better facilities for trained nursing care during the puerperium, and education of the pregnant woman.

Discussion by Dr. J. O. Arnold: Dr. Hartley's last remark is the keynote of the problem, it is a matter of education and development of interest in all phases of society, and must not be left to the physician, women's clubs have the force, means and talent necessary to push something like this. Two years ago Dr. Arnold began giving illustrated talks on prenatal work before women's clubs in the city, trying to introduce two ideas; the need for more maternity hospitals or a large maternity building as a center for education, and the establishment of definite motherhood centers in various sections for instruction on a smaller scale. One club in particular has taken this up.

Dr. C. C. Norris: With Dr. Landis we started one of the first prenatal clinics in the city at Phipps Institute fifteen years ago, which has developed considerably. Prenatal work aims to ascertain the cases with contracted pelvis, malpositions, and toxemia; to educate the mother as to her own care and care of the child; and to lessen infant mortality. Mothers are followed three months after delivery, and the child for five years. Social service workers are carefully selected.

Dr. Collin Foulkrod: Prenatal work is weak when it comes to delivery, because of the difficulty in getting nurses in private homes, although the majority of cases can be safely cared for at home. It is hard for the general practictioner to give detailed attention to his maternity cases.

Dr. Boyd: Appreciable advance and progress is being made, but there is still more to do. The community must work more and more with the physician.

Dr. Williams: Those in charge of prenatal clinics should take to heart the remarks about the zoning of the city. The death rate from puerperal infection has not dropped since the time of Dr. Holmes, and greater efforts, time and study are required.

Dr. Ellen C. Potter: "The Relation of the Department of Public Welfare to the Physicians."—The Department of Public Welfare is not a new thing, but the combination of the State Board of Charities, Administration of Private Philanthropies, and the Mothers'

Assistance Fund. One new thing has developed through the power invested in the State Board of Charities—the problem of the delinquent child, prison industries, and supervision of the penal institutions of the state. The Department is related to physicians in regard to the hospitals of the state, and in the field of mental health. For fifty years Pennsylvania has been committed to a policy of financial assistance to private philanthropies, since it began to care for the orphans of the Civil War. The use of the appropriations has become political and not philanthropic, and the state institutions have been starved at the expense of private organizations. Governor Pinchot insists that all departments operate as part of the Administration, and any wish that might hurt progress elsewhere must be abandoned.

An attempt is made to carry out this administration policy. The actual cut in appropriations is thirty per cent. Some hospitals have been receiving thirty cents a day and others fifteen dollars a day for treatment, and a fairer method of reckoning must be devised. Pennsylvania's gifts to private philanthropies are outside the real function of the state, and are by grace, not by right.

Pennsylvania has not developed a program of mental health, and more mental health clinics must be established. By advice to local physicians and visits of psychiatrists, eighty to ninety per cent of the feebleminded and insane can be taken care of outside of institutions.

Discussion by Dr. J. C. Doane: The question is whether the care of the indigent sick and poor is the responsibility of the state. Hospitals never can run on their own income, and it is the patient who suffers in the last analysis. There is often lack of economy in hospital management, supplies, etc. The withdrawal of appropriations should be more gradual, giving the hospitals a chance to adjust their finances.

Dr. Owen Copp: There is a new spirit and attitude pervading the old machinery, and attention is focused on prevention, cure and treatment. The physician is the basic factor in welfare work. It is an obligation of the state to see that every dependent person is rendered necessary aid, and the state owes an enormous debt to private philanthropies for finding the need, seeing how it can be met, and passing that on to the state.

Dr. Henry D. Jump: There is little difference whether the indigent poor are taken care of in state or private institutions. If the latter had no need of funds closer lines might be drawn. Although there is a crying need for care of the insane, "the poor we have with us always," and must be taken care of. The institution of per diem appropriations is business efficiency. Social welfare and the physician are linked interchangeably.

Dr. Roberts: Governor Pinchot is trying to correct the appropriation of money where it is not needed or not deserved.

Dr. F. Hurst Maier: Report of Committee on "The Study of the Nursing Situation in Philadelphia."—Dr. Maier spoke of the difficulties encountered by the committee, and gave their findings, with several recommendations. He suggested greater use of the Visiting Nurse Society; a plan of group nursing; the annual registration of nurses, with the understanding that nurses will accept any call to service; and the idea of using licensed attendants.

A. R. Winter, Reporter.

SOMERSET—MARCH.

The Somerset County Medical Society at the March meeting had the honor and pleasure of hearing Dr. Lawrence Litchfield, President of the Medical Society of the State of Pennsylvania, who addressed us on the subject of influenza.

The rank that Dr. Litchfield held as a surgeon during the World War and the reports of his many subordinates, enable him to speak and teach about influenza as few others can.

He told us of the suddenness and severity of the attack. A person may be well at the moment, and sick and in the hospital in an hour. There may be one case to-day, a hundred to-morrow, and hundreds and thousands in a week. During the War it came almost like an avalanche. The Doctor and his sixty-odd subordinates were nonplused and their ability over-taxed.

Postmortem examinations disclosed the fact that any vital organ might be involved, but that by far the most fatal and most frequent involvement was of the lungs. Nevertheless the Doctor saw very few cases in which true pneumonia occurred. This was indeed a revelation to most of us.

If anyone knows influenza from A to Z, we think Dr. Litchfield is that man. As to treatment he said it seemed that the best that could be done was but little—to put the patient to bed and treat complications as they arise.

The discussion of the subject was shortened on account of lack of time, but many questions were asked, to which the Doctor made satisfactory replies.

H. C. McKinley, M.D., Reporter.

SUSQUEHANNA—MAY

The Susquehanna County Medical Society held its annual meeting in the Public Library at Montrose, Pa., on May 1st. The business meeting was called to order at 11:00 a.m. by the president, Dr. A. E. Synder, of New Milford, Pa. After the regular routine of business, the following officers were elected for the ensuing year: President, Dr. D. J. Peck, of Susquehanna; vice-presidents, Dr. H. W. Trimmer, of South Gibson, and Dr. A. S. Blair, of Hallstead; secretary-treasurer, Dr. E. R, Gardner, of Montrose; censor, Dr. Caterson, of Montrose, reporter, Dr. Robert D, Mackey, of Montrose; and district censor, Dr. W. J. Condon, of Susquehanna.

At 2:30 p.m. a public meeting was held on the subject of Toxin-Antitoxin. This was conducted by Drs. Wm. R. Davies, Geo. A. Clark and D. E. Berney, all of Scranton. The meeting was well attended by both the medical profession and the laity and the subject was well presented, so that both the laity and the medical profession were much better informed about the Schick test.

The Scranton doctors were given a vote of thanks for their instruction and the meeting adjourned.

H. D. Washburn, Reporter.

WARREN—MARCH-APRIL-MAY

The members have met according to the program during March, April and May.

The March meeting was held at Dr. Frantz's residence on March 19th and was addressed by Dr. Clancy, who explained a few of the useful tests for kidney function. The phenolphthalein test was demonstrated. The dinner provided by Dr. and Mrs. Frantz was a most bounteous one and was heartily enjoyed.

The April meeting was held at the Elks Club, April 16th, and Dr. Briggs described a condition known as "pylorospasm which occurs in infants." It is not a stenosis. It is more apt to be found in artificially fed infants. Vomiting is explosive and painful, muscles rigid. There is a neurotic inheritance, stools scanty. Treatment consists of regulation of diet, low fat, high protein, or lime water added to human milk, and use of atropin before feeding, 1-1000, washing out stomach, if necessary, and giving albumin milk dextro maltose mixture through a tube.

Arranged by Dr. Robertson, a Pasteur meeting was held May 4th in the Presbyterian Church. Dr. Joseph McFarland, of Philadelphia, was the speaker provided, and he held the attention of the audience to the end. Professor McFarland was tendered a dinner previous to the lecture by the U. of P. alumni, of Warren, to which the Medical Society was invited.

The May meeting of the Society was held May 21st at the Elks' Club with 14 members present. Dr. Apica gave a résumé of the chief organic extracts and their value in medicine. He cited the statement that insulin, the latest of the group, had been found beneficial in youthful diabetics, the group that heretofore gave the worst prognosis. He also said that the hypodermic injection of organic extracts seemed to give better results than oral administration. While the claims of the commercial pluriglandular exponent must be taken with many grains of salt, some capable clinicians have found good results from some combinations of gland extracts.

Dr. Condit took up the subject of hyperthyroidism and gave a very comprehensive review of the latest forms of treatment. Surgery seems to offer most help when applied early. While basal metabolism is always increased in genuine hyperthyroidism, it coincides pretty regularly with increased pulse rate and increased pulse pressure. With these two factors known, a formula can be used which in the absence of metabolic estimates will give practical data. Dr. Briggs was host of the meeting.

M. V. Ball, M.D., Reporter.

WESTMORELAND—MARCH.

Friday, March 20th, was declared a general field day for the men of the medical fraternity of Westmoreland County, and the exodus to Greensburg was general in the ranks of the profession of the county and its coworkers from near and far.

Drs. W. Wayne Babcock and Thomas McCrae, of Philadelphia, presided singly and jointly in the presentation of abundant and interesting clinical material at the Westmoreland Hospital from two to five in the afternoon, before some three hundred assembled physicians.

Exceedingly minute and well prepared histories were in possession of all present and it was an abundant pleasure to the assembled audience to follow the paths of these master minds in their presentation of both near and remote trends in consideration of the cases in hand.

After an intermission of one hour, a change of location was made to the Penn Albert Hotel, where a delectable dinner was served to the accompaniment of excellent music and good fellowship.

With chairs pushed back from the table and smoke curling to the ceiling, good time number three was ushered in, and ensued an hour's speech and merrymaking. Dr. McCrae spoke on "Modern Medicine," Dr. Babcock on "Resuscitation in Somatic Death," and Dr. Robert Armstrong, of West Virginia, alternately jollied and stung his audience under a heading of "Medical Humor." Mr. Albert Bell, respected member of the Westmoreland County Bar, on the subject of "Professional Ideals" was most enthusiastically received.

It was a bang-up big day, speaking medically, and crammed full of the very best things pertaining thereto. Not the least of its manifold pleasures was that of the meeting of old friends—friends too seldom seen. Allegheny County—which means Pittsburgh—and Fayette County to our south sent packed and welcome delegations that we were pleased and proud to entertain.

D. Allison Walker, Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

The four year old son of Dr. Harvey A. Price, of Port Carbon, was killed by an automobile on May 16th.

Mrs. Mary Elizabeth Welch, of Philadelphia, widow of Dr. William M. Welch, the widely known small-pox expert, died April 28th at the age of 83.

Dr. Calvin C. Dibert, of Bedford, who was graduated from Columbus (Ohio) Medical College in 1884, died on March 28th, aged 62 years.

Mrs. Josephine Farrell Garvey, wife of Dr. T. Q. Garvey, of Lancaster, died of pneumonia on April 24th. She is survived by her husband and five sons.

Dr. Henry N. Speer, of Philadelphia, died on April 19th. He was a graduate of Jefferson Medical College of Philadelphia, class of 1893.

Dr. William E. Metzger, of Alvira, aged 73 years, died on April 27th, following a long illness. He was a graduate of the University of Pennsylvania School of Medicine, class of 1874.

Dr. John L. Ireland, of Erie, died suddenly on April 11th, of heart disease. Dr. Ireland was born in 1870 and was graduated from Hahnemann Medical College and Hospital of Philadelphia in 1893.

Dr. Isaac W. Riggs, of Pittsburgh, who was graduated from the Western Reserve University School of Medicine, Cleveland, Ohio, in 1869, died on April 9th, aged 76 years.

Dr. James W. Parshall, of Uniontown, aged 60 years, died on April 14th of pneumonia. Dr. Parshall was a graduate of the University of Maryland School of Medicine, Baltimore, class of 1887.

Dr. William W. Stevens, of Philadelphia, aged 62 years, died suddenly on April 21st of heart disease. He was graduated from Ensworth Medical College, St. Joseph, Mo., in 1892.

Mrs. Barbara Blecher, wife of Dr. J. F. Blecher, of Middletown, died on May 1st from a complication of diseases. She is survived by her husband, one son, Dr. D. B. Blecher, of Fleetwood, and one daughter, Mrs. Ralph Meckley, of Atlantic City.

Dr. Mercer R. Girvin, of Mount Nebo, who was graduated from the College of Physicians and Surgeons, Baltimore, Md., in 1893, died on April 25th at the Lancaster General Hospital, aged 54 years. He is survived by his wife and one son.

Dr. William H. H. Githens, of Philadelphia, aged 82 years, died on March 24th following a long illness. Dr. Githens was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1866. He was a member of the College of Physicians and Surgeons, of Philadelphia; and was formerly president of the Obstetrical Society of Philadelphia,

Dr. Horace H. Cowles, of Lander, aged 70 years, died on April 15th of influenza and pneumonia. Two years ago he retired from active practice after an attack of hemiplegia, and since that time had never fully recovered his health. Dr. Cowles was graduated from the Medical Department of the University of the City of New York, in 1887. He is survived by his wife, three daughters and one son.

Dr. Willis Mather Baker, of Warren, died on April 21st, of pleurisy, at the age of 66 years. Dr. Baker was a graduate of the University of Buffalo (N. Y.) Department of Medicine, class of 1878. For forty-two years he followed the practice of medicine and surgery in Warren, and during thirty years of that period was local surgeon for the Pennsylvania Railroad. He served several years as president of the Warren County Medical Society, and was at one time trustee of the Medico-Chirurgical College of Philadelphia, of Niagara University at Buffalo and of the Buffalo Medical College. He is survived by his widow and a son and daughter to his first wife.

Dr. A. D. Tewksbury, of Tunkhannock, an honorary member of the Wyoming County Medical Society, died at the Peoples' Hospital, Sayre, on May 2d, in his 86th year. Dr. Tewksbury was graduated from the University of Michigan Medical School, Ann Arbor, Mich., in 1864. After his graduation he enlisted as a surgeon and served throughout the war, having been present when Lee surrendered. Some years after the war he went abroad to specialize on the eye, ear, nose and throat, attending clinics in London, Paris and Vienna, and finishing at Edinburgh. Besides his wife, he is survived by one son, Dr. Walter B. Tewksbury, and two brothers.

Dr. Francis Hammer Elder, for many years a practicing physician of Overbrook, died at his home on May 9th. Dr. Elder was born in Blairsville in 1859 and was graduated from the University of Pennsylvania School of Medicine in 1881. For a year after his graduation he held the post of Assistant to Professor Francis C. Wilson at the Jefferson Medical College. He was then appointed chief of the Gynecic Clinic at the Polyclinic Hospital and later served at the Southwestern Dispensary. In 1894 he resigned to take up private practice. He was a member of the Archeological Society of the University of Pennsylvania and the Historical Society of Pennsylvania. His widow survives him.

BIRTHS

Born to Dr. and Mrs. James C. Boyle, of Butler, May 5th, a son, Wilmer Dean Boyle.

Born to Dr. and Mrs. John A. Weierbach, of Quakertown, on May 8th, a daughter, Janet May Weierbach.

Dr. and Mrs. John E. Livingood, of Reading, announce the arrival of a daughter at the Reading Hospital on April 21st.

ENGAGEMENTS AND MARRIAGES

The engagement of Miss Florence Lebzelter to Dr. George W. Stoler, both of Lancaster, was recently announced.

Dr. Charles S. Duttenhofer, of New Holland, formerly of Lancaster, and Miss Mary Hyman, of Churchtown, were united in marriage on April 25th.

Mr. and Mrs. William Cairns Gray, of Merion, announce the engagement of their daughter, Miss Mabel Eleanor Gray, to Dr. Benjamin A. Thomas, of Philadelphia.

Announcement has been made of the engagement of Miss Katherine Smoot, of Baltimore, Md., to Dr. W. Minster Kunkel, of Harrisburg. Their marriage will take place this month.

The wedding of Miss Mary C. Fiero, daughter of Mrs. S. E. Fiero, and Dr. Joseph Evans Sands, son of Mrs. A. J. Cadwallader, of Yardley, will take place on June 12th at the bride's home at Newtown Square.

Dr. and Mrs. Charles C. Cocklin, of Harrisburg, have announced the engagement of their daughter, Miss Miriam Cocklin, to Dr. Charles B. Fager, Jr., son of Dr. and Mrs. V. H. Fager, also of Harrisburg. The marriage will be solemnized in June.

ITEMS

Dr. James M. Anders, of Philadelphia, is recuperating after a long siege of illness.

Dr. Frank C. Hammond, of Philadelphia, recently spent a most enjoyable week in his old home town in Georgia.

Dr. and Mrs. R. M. Alexander, of Reading, who were recently married, have returned from their wedding trip.

Drs. G. A. Poust, of Hughesville, and J. F. Gordner, of Montgomery, are in Chicago, taking a post-graduate course.

Col. R. C. Loving, of the Medical Corps, U. S. Army, has resigned from active service and will take up the practice of medicine in Philadelphia.

Dr. C. L. Furbush, Director of Public Health, Philadelphia, is slowly recovering from an attack of vertigo sustained some weeks ago.

Dr. Eugene J. Asnis has resigned the Chair of Pathology and Bacteriology in the School of Medicine of Temple University.

Dr. E. D. Sarkis, of Persia, who was very active in medical matters in that country during the World War, is in this country for the present to arrange for the education of his children.

Dr. Judson Daland, of Philadelphia, read a paper at the annual meeting of the American Climatological and Clinical Association held in May at Niagara Falls, Ontario.

Dr. Collier F. Martin has resigned the Chair of Proctology in the School of Medicine, Temple University, and Dr. Harry Z. Hibshman has been advanced to Clinical Professor of Proctology, in charge of the department.

Dr. John A. Crewitt, of Newtown, suffered for the second time in less than a year, a severe loss by fire. The fire started in his office and destroyed everything there, and later a greater portion of the building was ruined.

Dr. George E. de Schweinitz, President of the American Medical Association, delivered the Bowman Lecture in London, England, in May, 1923. Dr. de Schweinitz will return in time to preside at the A. M. A. meeting in San Francisco.

The board of corporators of the Woman's Medical College of Philadelphia recently announced the appointment of Dr. Lida Stewart Cogill as professor of obstetrics, to succeed Dr. Alice Weld Tallant. The board also announced the appointment of Dr. R. Max Goepp as professor of medicine.

Ground has been broken and active arrangements are under way for the construction of a $300,000 wing for the Samaritan Hospital, Philadelphia. The plans contemplate the construction of two additional units which will afford a large increase in available beds for teaching purposes of the Medical Department of Temple University.

The Board of Directors of the Philadelphia County Medical Society has appointed a committee, of which Dr. John F. Roderer is chairman, to prepare suitable articles on medical, hygienic and sanitary topics to be broadcasted by radio through the Strawbridge & Clothier WFI station. As a rule these talks will be given on Saturday evenings at eight o'clock during the month of June.

The state-wide extension postgraduate course in medical education being conducted by the Medico-Chirurgical College, Graduate School of Medicine of the University of Pennsylvania, in coöperation with the Medical Society of the State of Pennsylvania, is at present conducting successful courses in Sayre, Pa., using the Robert Packer Memorial Hospital, and in Schuylkill County, using the Fountain Springs Hospital for teaching purposes.

The Board of Trustees of the University of Pennsylvania has decided that

"Beginning with the year ending June 30, 1923, the Dr. Spencer Morris Prize, established by a bequest under the will of Dr. Spencer Morris in the former Medico-Chirurgical College, shall be awarded as a prize to a student physician in the Medico-Chirurgical College and Hospital Graduate School of Medicine in the University of Pennsylvania, who shall receive the degree of Master of Medical Science at the annual commencement, and who, in the opinion of the Dean of the said Graduate School of Medicine, has shown the highest scholarship among those receiving the degree of Master of Medical Science, and who will further undertake to continue his studies in the said Graduate School of Medicine as a candidate for the degree of Doctor of Medical Science in the said Graduate School of Medicine, the prize to be paid to such student physician in ten equal monthly installments from the time when the third year candidacy actually begins and continues."

NEW AND NONOFFICIAL REMEDIES

Tincture No. 111 Digitalis—P. D. & Co.—A fat-free tincture of digitalis which, standardized by the minimum lethal dose frog heart method of Houghton, is 50 per cent stronger than tincture of digitalis—U. S. P. The actions and uses of tincture No. 111 digitalis—P. D. & Co. are the same as those of tincture of digitalis. It was introduced at a time when the "fat" of digitalis was believed to cause gastric disturbances. This claim of superiority is not tenable and the preparation is sold simply as a standardized tincture of digitalis. To minimize deterioration through light and air, the preparation is marketed in one ounce amber vials and saturated with carbon dioxide. Parke, Davis & Co., Detroit, Mich. (*Jour. A. M. A.*, April 7, 1923, p. 1003).

Borcherdt's Malt, Cod Liver Oil and Iron Iodide.—Each 100 Cc. contains ferrous iodide 0.88 Gm. (4 grains per fluidounce), cod liver oil, 25 Cc. and Borcherdt's malt extract (plain) 75 Cc. Borcherdt's Malt Extract Co., Chicago (*Jour. A. M. A.*, April 21, 1923, p. 1143).

Carbon Tetrachloride Medicinal.—Carbon Tetrachloride has narcotic and anesthetic properties somewhat similar to those of chloroform. It has recently come into use as a vermifuge in the treatment of hookworm disease. It also removes some intestinal parasites other than the hookworm. It is reported that usually about 95 per cent of the hookworms are removed by the first dose. Its use appears to be relatively safe, but serious symptoms and even death have been reported. It is administered in water, milk or gelatin capsules on an empty stomach, followed by a purgative dose of magnesium sulphate.

The dose is from 2 Cc. to 3 Cc. (30 to 45 minims) for adults. Carbon tetrachloride is a heavy liquid, having an odor somewhat like that of chloroform. It is almost tasteless and almost insoluble in water.

Carbon Tetrachloride Medicinal—M. C. W.—A brand of Carbon Tetrachloride Medicinal—N. N. R. Mallinckrodt Chemical Works, St. Louis.

Carbon Tetrachloride C. P.—P. W. R.—A brand of Carbon Tetrachloride Medicinal—N. N. R. Powers-Weightman-Rosengarten Co., Philadelphia (*Jour. A. M. A.*, April 21, 1923, p. 1143).

Modified Pneumococcus Vaccine.—A vaccine or "antigen" prepared by digesting a suspension of pneumococci, types I, II, III and Group 4 at 37 C. until about 95 per cent of the organisms have become gram-negative and the mixture is relatively nontoxic to guinea pigs. It is believed that this method yields a vaccine with greater protective power. There is some evidence that this vaccine is of value in the treatment of lobar pneumonia. It is not intended for prophylactic use.

Pneumococcus Antigen-Lilly.—A modified pneumococcus vaccine—N. N. R.—It is marketed in 5 Cc. vials, each Cc. containing twenty billion partially autolyzed pneumococci. Eli Lilly & Co., Indianapolis, Ind. (*Jour. A. M. A.*, April 21, 1923, p. 1143).

Sulpharsphenamine-Squibb.—A brand of sulpharsphenamine—N. N. R. (See *Jour. A. M. A.*, March 31, 1923, p. 919.) It is supplied in ampules containing respectively, 0.1 Gm., 0.2 Gm., 0.3 Gm., 0.4 Gm., 0.5 Gm., and 0.6 Gm. E. R. Squibb & Sons, New York City (*Jour. A. M. A.*, April 21, 1923, p. 1143).

Neo-Silvol.—A compound of silver iodid with a soluble gelatin base containing 18 to 22 per cent of silver iodid in colloidal form. Neo-silvol, even in concentrated solutions, causes neither irritation of mucous membranes nor coagulation of albumin. It does not stain the skin. It is claimed that neo-silvol in laboratory tests for germicidal value has been found as effective as phenol in its action on bacteria. Neo-silvol is intended for the prophylaxis against, and treatment of infections of accessible mucous membranes and is claimed to be indicated in affections of the genito-urinary tract and of the eye, ear, nose and throat. Parke, Davis & Co., Detroit, Mich. (*Jour. A. M. A.*, April 28, 1923, p. 1218).

Phenoltetrachlorphthalein—H. W. & D.—A dibasic dye formed by the condensation of phenol and tetrachlorphthalic acid or its anhydride. Phenoltetrachlorphthalein has been used for the determination of the functional output of the liver. It can be used, *in the form of the sodium salt,* intravenously; but cannot be given subcutaneously or intramuscularly. The substance may also be obtained in the form of Ampules Phenoltetrachlorphthalein containing a solution of disodium phenoltetrachlorphthalein. Hynson, Wescott & Dunning, Baltimore, Md. (*Jour. A. M. A.*, April 28, 1923, p. 1218).

Sulpharsphenamine-Abbott.—A brand of sulpharsphenamine-N. N. R. It is marketed in ampules containing respectively, 0.2 Gm., 0.3 Gm., 0.4 Gm., and 0.6 Gm. The Abbott Laboratories, Chicago. (*Jour. A. M. A.*, March 31, 1923, page 919.)

Diphtheria Toxin-Antitoxin Mixture—Lilly.—A diphtheria toxin-antitoxin mixture (see *New and Nonofficial Remedies*, 1922, p. 282), each Cc. constituting a single human dose and containing 3 L+ doses prepared in accordance with the requirements of the U. S. Public Health Service. Marketed in packages of three vials sufficient for one treatment. Eli Lilly & Co., Indianapolis, Ind.

PROPAGANDA FOR REFORM

Ethylene as an Anesthetic.—The Council on Pharmacy and Chemistry has published a preliminary report on the experimental status of ethylene as an anesthetic. A. B. Luckhardt and J. B. Carter report that animal experiments with ethylene indicate that ethylene has a direct action on the nervous system when a concentration of 90 per cent is used; that the motor reflexes are abolished at this concentration, and that the phenomena produced by the undiluted gas are partly asphyxia, which factor can be removed by the addition of oxygen, when it is seen that narcosis results from the ethylene itself. Trials carried out on human subjects appear to confirm the anesthetic value of ethylene. The investigators believe that ethylene will be found more desirable than nitrous oxid, but the experiments reported have been carried out on persons in normal health only. The Council reports that confirmation of the work is necessary before ethylene can be admitted to New and Nonofficial Remedies, but that further research with the gas is warranted. As a preliminary to such research, the Council cautions that the quality of the product must be determined (*Jour. A. M. A.*, April 7, 1923, p. 1003).

ZONITE.—Zonite is advertised as a new and wonderful discovery based on the "Carrel-Dakin" solution. The propaganda is, in effect, a capitalization of the work of Carrel-Dakin and others. Chemically Zonite, after dilution with an equal quantity of water, is claimed to be essentially the same as Surgical Solution of Chlorinated Soda (Carrel-Dakin) of New and Nonofficial Remedies.

Zonite has been exploited to both physicians and the public (*Journal. A. M. A.*, April 7, 1923, p. 1024).

OWL ENAMEL TOILET CREAM.—This preparation, manufactured by the Owl Drug Co. (Kansas City, Mo.), is sold for the alleged purpose of "Beautifying the Complexion and Rendering the Skin Soft and Velvety." Dr. Henry W. Woltman, of Rochester, Minn., has reported a case of lead poisoning in a woman who had been using Owl Enamel Cream. The A. M. A. Chemical Laboratory analyzed the product and found it to be composed essentially of lead carbonate, calcium carbonate and glycerin. The indiscriminate sale of a preparation of this sort is not merely a menace to the public health but a commentary on the laxity of our laws. It is notorious that certain salts of lead have for years been responsible for cases of chronic lead poisoning, due to their employment in cosmetics. In spite of this any concern, responsible or irresponsible, can sell for indiscriminate use a cosmetic loaded down with poisonous ingredients (*Jour. A. M. A.*, April 7, 1923, p. 1022).

ALCOHOL AND DISEASE.—Recently a statistical report regarding the possible influence of alcohol on the prognosis of pneumonia in a large municipal hospital has been published. The data for nearly 3,500 cases of lobar pneumonia showed that, with reference to the patient's habits of indulgence in alcoholic drinks, that the mortality was higher in moderate users than in light users or abstainers, and that the mortality is much higher in excessive users than in moderate users. It must be borne in mind, however, that these statistics have no bearing on the use of alcohol in therapy (*Jour. A. M. A.*, April 7, 1923, p. 1007).

INCOMPATIBILITY OF MERCUROCHROME-220 SOLUBLE WITH LOCAL ANESTHETICS AND ALKALOIDS.—An accident from precipitation of mercurochrome-220 soluble by procain has been reported. The A. M. A. Chemical Laboratory has confirmed the incompatibility. The following local anesthetics were found to give precipitates when treated with mercurochrome-220 soluble solution: alypin, apothesin, benzocain, butyn, cocain hydrochlorid, B-eucain lactate, phenacain, procain, propaesin, quinin and urea hydrochlorid, tropacocain hydrochlorid and stovain. Many vegetable alkaloids were also found to be incompatible with mercurochrome-220 soluble (*Jour. A. M. A.*, April 14, 1923, p. 1091).

GLYCO-PEPTO MILK NOT ADMITTED TO N. N. R.—The Council on Pharmacy and Chemistry reports that Glyco-Pepto Milk is a sour milk said to contain Bacillus bulgaricus, Streptococcus lacticus and Glycobacter peptolyticus. The preparation is marketed by the Glyco-Pepto Manufacturing Co., Long Island City, N. Y., with the claim that its administration supplemented with a potato diet through the presence of Glycobacter peptolyticus permits the implantation of the Bulgarian bacillus in the lower intestine and thus brings about an almost complete disappearance of phenols and indoxyl from the urine. The Council reports that Glyco-Pepto Milk may be a pleasing beverage and light food, but that there is no acceptable evidence for the many therapeutic claims that are made for it. The Council declared the preparation inadmissible to New and Nonofficial Remedies (*Jour. A. M. A.*, April 21, 1923, p. 1165).

NEPHRITIN (Reed and Carnrick) was reported on by the Council on Pharmacy and Chemistry in 1907. The following is a summary of this report: The advertising claims for Nephritin are based on the theory that certain granules in the renal cells, called "grains of segregation" and claimed to have been observed microscopically, carry on the secretion of urinary constituents and that a deficiency of them is the cause of nephritis. While Renaut, who formulated the theory, recommended as a cure for nephritis the maceration of fresh kidneys in physiologic sodium chlorid solution, Reed and Carnrick urged objection to the maceration and explained that nephritis represents all the action of the maceration, but is fifty times as potent. Nephritin is stated to be "the grains of segregation from the cortex of the pig's kidney, the renal connective tissue being eliminated." It appeared impossible that the microscopic structures claimed to be present in nephritin could be isolated as such from the connective tissues, and, on inquiry by the Council, no information on this point was to be had. Further, the firm presented no evidence for the claimed action of nephritin or for the claim that it was fifty times stronger than the maceration (*Jour. A. M. A.*, April 21, 1923, p. 1167).

THE TREATMENT OF SYPHILIS.—The general view is that neither mercury or arsphenamin positively cures in cases in which the disease has existed long enough to become well established as a systemic disease, but that they both tend to cure and that both are valuable in treatment. It is the general opinion of syphilologists that when chancres are seen that are unmistakable, these cases should be vigorously treated and that there is a good chance of aborting the disease at this time. If early cases are not treated until the Wassermann reaction has become positive, there is a difference of opinion as to treatment. There are syphilologists who believe that these early cases are better treated by mercury alone until the patient has had an opportunity to develop all the immunity of which he is capable. After the patient has established all the resistance of which he is capable, these syphilologists would treat with mercury and arsphenamin. It is becoming increasingly apparent that the advantages of the new method of treating syphilis in which arsphenamin plays the larger part, are by no means certain. The trend of the last few years has been in the direction of placing more reliance on mercury and the older methods in the treatment of syphilis (*Jour. A. M. A.*, April 21, 1923, p. 1167).

THE

MEDICAL SOCIETY OF DELAWARE

ADDRESS

PERNICIOUS ANEMIA*

JOHN W. JAMES, M.D.

DOVER, DEL.

It has always been the custom for the President of the Medical Society of Delaware to read a paper before that body, and so to-day I am going to attempt to follow that custom, realizing fully how difficult it is to present anything entirely new. So I hope you will pardon me if I repeat things you already know.

The subject I have chosen is pernicious anemia, one of the diseases, like many others, where a man's death warrant has practically been signed, when the condition is recognized, for I am sorry to say we have as yet found no cure for this disease.

Pernicious anemia is defined as being a chronic and usually fatal disease of unknown origin, producing, especially in elderly men, paroxyms of intense anemia and usually degeneration of the spinal cord. Ehrlich described the essential characteristics of the blood, with histological details which his staining methods made possible. Since Ehrlich, no one has materially added to our knowledge of this disease. The malady occurs quite frequently, and about the same in all localities. Like cancer, it seems to be a disease of elderly people, the majority of the cases occuring after thirty-five years of age. It affects women oftener than men. There does not seem to be any predisposing cause; that is, none that we can be sure of.

The evidence found after death points to a powerful poison having acted on the tissues—hemolysis of the blood, patchy degeneration of the cord, and fatty changes in parenchymatous organs. In the early stages of this serious malady there are no distinctive symptoms. The patients cannot even state positively when they began to feel ill. They usually come complaining of general weakness or some symptoms referable to the gastro-intestinal tract, such as nausea, vomiting, dyspepsia, diarrhea, or sore mouth. The nervous system may be the seat of complaints, namely headaches, dizziness, fainting, abnormal sensations in the hands or feet, numbness, tingling, etc. Sometimes, loss of power in the lower limbs takes place early in the disease, irritability, somnolence, lack of power or concentration or energy. The gastro-intestinal and nervous symptoms seem to be the most common in the beginning, but the patient may complain of symptoms referable to the circulatory system, such as dyspnea, edema, palpitation of the heart, etc. Jaundice and hemorrhages may be an early symptom; in fact, the patients may complain of a variety of symptoms.

Some time during the attack the characteristic waxy yellow color is bound to appear, the yellow being so intense that it is sometimes difficult to distinguish from jaundice. The blood always shows a characteristic picture, with the hemoglobin low, but the color index almost always high. This symptom is distinctive, as it seldom occurs in other forms of anemia.

Microscopically, there is marked poikilocytosis. Macrocytes predominate, although microcytes are almost always found. Megaloblasts and normoblasts are also found. Polychromatophilia is always present and is found more frequently than in any other disease.

The treatment of this disease has been disappointing, for we have as yet found no cure. The arsenical preparations seem for a time to help a great many cases. To get results this remedy should be given to the point of toleration. Iron, tonics, fresh air, change of climate, etc., should be tried. In some cases transfusion of blood seems to prolong life. Splenectomy has also been tried, and removal of foci of infection (teeth, tonsils, gall-bladder and appendix). Radium in the hands of some has given good results.

On account of the dearth of cases in my own practice, I hope you will pardon me for referring to the work of others.

J. M. Anders (Tr. Ass. Am. Phys., 1919, Phila., 34, 353-364) says, in regard to transfusion of blood in pernicious anemia:

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*Presidential address delivered before the Medical Society of Delaware, Dover, Del., October 9, 1922.

"It is highly probable that transfusion of blood in pernicious anemia owes its beneficial effects principally to the stimulation of the antihemolytic properties of whole blood, possibly also to some extent to its power to increase the activity of the bone marrow.

"A. F., age 65 years, retired merchant, healthy parentage, began to decline in health about March 1st, 1918, growing weak and pale and dyspneic. Anorexia soon was complete and there were belching, abdominal distress, and marked mental hebetude. There was a marked mitral murmur. After three weeks in Atlantic City patient had to be removed to his home. On May 19 blood count showed: Hemoglobin 20% (von Fleischl); erythrocytes 720,000; leukocytes 34,000; differential—polymorphoneculear neutrophiles 72%, small lymphocytes 23%, large lymphocytes 2%, transitional 2%, mast. cells 1%. Marked anicytosis and poikilocytosis, megalocytes predominate; polychromatophilic degeneration; very few erythoblasts.

"Transfusion performed May 24th, 500 c.c. of whole blood being transferred. Later in day patient had a slight chill, rise of temperature and marked restlessness, from which he quickly recovered after injecting several doses of adrenalin chlorid and atropin. June 3d patient had resumed his normal activities. The blood count now showed: Hemoglobin 40%; erythrocytes 2,050,000; leukocytes 5,400. The cardiac murmur had disappeared. Arsenic and iron injections hypodermically, which he had received since transfusion, were discontinued.

"In November, condition good; hemoglobin 70%, erythrocytes 3,280,000 and leukocytes 5,000. January 1, 1919, patient slowly developed a relapse; a little pallor, a little cardiac palpitation, dyspnea and anorexia appeared. January 23d, blood count showed: hemoglobin 60%, erythrocytes 1,700,000 and leukocytes 3,600. March 8th, transfusion was repeated. Almost no reaction followed, but improvement was immediate.

"Both clinical experience and statistical evidence show that it is unwise to wait until the average hemoglobin percentage falls as low as 20%. Evidence exists to show that those examples of the disease which have shown most improvement after transfusion had run a prolonged course, as a rule, while the more rapidly progressive cases manifested a feebler remission.

"Other special methods of treatment have been employed in cases refractory to arsenic and iron therapy, e.g., by the hypodermic use of splenic extract and antistreptococcus and antistaphylococcus serums; but as these have not gained an enviable reputation for themselves, it is unwarrantable to permit them to supercede transfusion of blood, which promises a far better therapeutic effect."

From available literature and personal observation and knowledge of individual cases the author expresses the opinion that the results of splenectomy hardly warrant the operation. The belief that transfusion following splenectomy brings a more steady response than without splenectomy is borne out by experience.

The author feels that the internists and general practitioners should advise immediate transfusion after an assured diagnosis has been made, during the nonquiescent period, since it initiates a prompt remission in at least 56% of the cases. This procedure should be supplemented by appropriate hygienic measures and approved medicaments; and in cases which are refractory to transfusion, the usual medical treatment by arsenic, including salvarsan intravenously and subcutaneous injections of iron, should receive a trial before resorting to other methods of treatment.

H. Z. Giffin (Jour. A. M. A., Feb. 10, 1917, 429), in reporting the treatment of pernicious anemia, says:

"There are definite indications of consistent temporary improvement in a majority of instances, but there is no evidence that splenectomy has cured pernicious anemia. A review of 31 cases of splenectomy for pernicious anemia demonstrates a definite gain in the blood weight and the general condition during the first three months of the postoperative period in 78% of the cases; during the second three months' period, 68% of living patients maintained their gain.

"A consideration of the advisability of splenectomy would seem to be warranted at present, chiefly in young and middle-aged patients of good general resistance, who show evidence of active hemolysis and in whom the spleen is moderately enlarged.

"The estimation of the blood derived pigments in the duodenal contents is valuable in determining the degree of hemolytic activity present at a given time. A comparison of the degree of hemolysis with the severity of the anemia would seem to be indicative of the productive power of the bone marrow.

"Preoperative treatment, especially transfusions, should be employed to influence the general condition of the patients and to improve the characteristics of the blood picture. A polymonophonuclear increase which persists for months, great numbers of normoblasts and a gradual rise in the hemoglobin and red cell count are prominent. The operative risk is increased when the hemoglobin is below 35% and the erythrocyte count less than 1,500,000 cells.

"Postoperative transfusions have not been given as a routine procedure, but transfusions have been successfully employed in postoperative relapse."

W. D. Gatch (Chicago Med. Recorder, 43, 133, 1921), writing on the surgical aspects of pernicious anemia, says:

"Attempts to cure pernicious anemia by surgical methods have been made along three lines:

"1. Since it is generally supposed that a toxin is the factor in causation of pernicious anemia, repeated attempts to cure the condition have been made by the removal of possible foci of infection or toxemia in the teeth, tonsils, gall-bladder, appendix, etc.

"2. Since the spleen plays a definite part in the causation of splenic anemia, as proved by the cure of this disease by splenectomy, this operation has been tried repeatedly as a means of treating pernicious anemia.

"3. Since by the transfusion of blood any anemia can be removed, this procedure has come to be the standard treatment for all grave anemias."

The writer discusses the merits of each of these procedures. That pernicious anemia is caused wholly by foci of chronic infection does not seem probable to him. As for splenectomy, he quotes the words of W. J. Mayo: "The etiology of pernicious anemia is unknown, the early symptoms are indefinite, and by the time the diagnosis can be made the disease is incurable."

"Splenectomy in pernicious anemia does not appear to be based on sound reasoning, and there seems to be no foundation for the belief that splenectomy will cure pernicious anemia. Considering the confusion which so often attends the early diagnosis it seems probable that obscure cases of hemolytic icterus and splenic anemia have been accidentally included in the pernicious anemia group. Removal of the spleen in such cases has given the impression that splenectomy cures pernicious anemia. In our experience, in the cases in which results were most favorable, the symptoms were less characteristic of pernicious anemia."

The writer uses blood transfusion in treatment of his cases but reports that none of his results are lasting. He believes pernicious anemia an incurable disease by present methods of treatment.

W. J. Mayo (Surg. Clin. N. A., 1:1314, 1921), in an article on Pernicious Anemia, says:

"A case of pernicious anemia in a farmer, age 39 years, came under treatment at the Clinic in 1921. Appendectomy had been performed in 1912 and the patient had had influenza in 1918. Since 1911 he had been troubled with a vague distress in the epigastrium associated with belching. His tongue had been sore at intervals for four years. In the spring of 1920 he had begun to lose color and to feel weak, the hemoglobin had been 38 per cent.

"A blood transfusion before November had only temporary effect; two later transfusions did not relieve him. He had palpitation and dyspnea and lost 7 pounds in weight. The skin was yellow. The spleen could be palpated 3 cm. below the costal margin. The tongue was bald. Achlorhydria was present and a roentgen-ray examination of the stomach was negative. The blood findings were those of anemia.

"The diagnosis was of pernicious anemia, and splenectomy was decided upon because the patient's condition did not improve after four transfusions.

"April 9th, 1921, operation was performed and a large adherent spleen, dark in color, resembling that of hemolytic icterus, and weighing 560 gm. was removed. A transfusion of 500 c.c. was given after operation. The patient's condition improved after operation until June, when symptoms returned. August 11th, 1921, the hemoglobin was 10 per cent and the erythrocytes 750,000. Five transfusions were given. The erythrocytes are now more than 2,000,000 despite an intercurrent bacillary dysentery. He is still under treatment."

It would seem, according to the writer, that "the spleen was not the cause of the pernicious anemia, but rather an agent of destruction, that the formation of erythrocytes was defective, and as one of the functions of the spleen is the destruction of the worn-out corpuscles, these subnormal corpuscles, the best the patient could produce, were unnecessarily sacrificed. The removal of the spleen checked the unnecessary destruction of the blood."

In the first nineteen cases of splenectomy for pernicious anemia in the Clinic three deaths occurred because the patients were already on the down-grade. It should be done while the patient is on the up-grade, following blood transfusion.

A. Waag (Munch. Med. Wchns., 68:677, 1921), on repeated injections of blood in pernicious anemia, says:

"Surprisingly good results have been secured of late by the profession through the use of repeated small doses of whole blood injected subcutaneously in pernicious anemia. Pappenheim recommended the method because it is simple, conservative and free from severe, febrile sequels. Carnot interprets the improvement that follows as due to an increased erythropoiesis of the bone marrow."

The author reports in detail his remarkable success in treating a man, who on admission to the hospital, presented hemoglobin content of blood, 25 per cent, erythrocyte count 285,000, and color index less than 1. After the usual arsenical preparations had failed, he injected subcutaneously into the thigh of the patient 5 c.c. of whole blood taken from the brachial vein of the donor. A like injection was given the following day. The effect was striking. Two days after the first injection there was marked improvement in the patient's general condition. The hemoglobin had risen to 30 per cent and the erythrocytes to 1,500,000. The patient now received twice a week 5 c.c. of blood. In a week the hemoglobin in content had become 35 per cent and the erythrocyte count, 2,000,000. In four weeks the hemoglobin was 55 per cent and the erythrocyte count, 2,600,000. The patient had gained about 13 pounds and felt well. Temperature was normal. The urine was free from albumin, sugar and urobilin. The patient had borne the injections (nine in all, 5 c.c. each) without other manifestation than a slight smarting sensation, which was relieved by hot compresses and ichthyol bandages.

J. C. Ferrier (Brit. M. J., 1:932, 1921), on the Treatment of Pernicious Anemia with Calomel, says:

"Patient was a married woman, 37 years old, with pernicious anemia. There was no hemorrhage to cause it. The complexion was lemon-colored. The number of red corpuscles was about three-fifths of the normal, the color index was above normal (1.25) and there was poikilocytosis. She grew steadily worse in spite of arsenic and other tonics, until she was confined to bed. As she complained of irritation caused by passing uric acid crystals, the arsenic was stopped, and the patient was given two grain doses of calomel, at first twice a week for six weeks, afterwards once a week for another six weeks, and finally once a month. She has kept on with the monthly dose until the present time. Improvement after a few doses of calomel was marked. The uric acid crystals disappeared and the anemia steadily improved.

"With the exception of some red bone marrow tabloids after she began to improve and some soda mixture for dyspepsia, no other drugs were given. At present the patient looks and feels quite well. Diagnosis of pernicious anemia had been made from blood smears."

H. Z. Giffin and T. L. Szlapka (J. A. M. A., 76:290, 1921), on the treatment of pernicious anemia by splenectomy, says:

"This review concerns fifty patients with pernicious anemia for whom splenectomy was performed. All were operated on more than three years ago. The operative mortality was 6%. Ten patients (21.3 per cent) of those who recovered from operation survived splenectomy three years or longer. Five patients (10.6 per cent) of those who recovered from operation have survived splenectomy more than four and one-half years and are still living. The total length of history of these five patients averages almost six years. In addition to the immediate remission which occurred constantly following splenectomy, splenectomy prolonged life in at least 20 per cent of the author's cases. There are no very definite preoperative characteristics of the disease indicative of favorable results following splenectomy. However, in the type of case in which there is evidence of active hemolysis, the patient shows a more marked immediate improvement.

"Splenectomy may be recommended in pernicious anemia when, in view of all the circumstances, personal as well as medical, the possibility of the prolongation of life appeals to the family and to the patient. Occasionally the operation may be performed to bring about an immediate remission."

In a contribution on the therapeutic value of the intravenous injection of soluble radium salts in the treatment of pernicious anemia and leukemia, F. Proescher (Radium, 7:71, 1916) says:

"Three detailed case reports are given, two of pernicious anemia and one of leukemia treated by intravenous injection of radium salts.

"In *Case 1,* after a diagnosis of pernicious anemia was established, treatment with subcutaneous injections of cacodylate of soda was given for a little over four weeks. Under this treatment the red cells and hemoglobin were markedly decreased. The color index increased to 1.4 from 1.2. The subcutaneous injection of arsacetin was then tried. After the injection, the red cells and hemoglobin increased gradually. After six months of this vigorous arsenic treatment the only result was an increase in red cells and hemoglobin. The red cell aspect still showed degenerative signs, and the leucocyte picture was not influenced at all.

"Twenty days after the last arsacetin injection, the patient received the first intravenous injection of 250 micrograms radium element in the form of radium bromide. After a latent period of approximately six or eight days during which time the red cell count was somewhat lowered, a marked increase in red cells and hemoglobin was noted. During the next six weeks the red cells remained at almost their normal number and once the color index (0.9) was normal.

"The increase must be attributed to the influence of radium upon the erythrocytes, but this extraordinary increase was only temporary. During the next three months the general condition of the patient was good and he returned to work. A blood examination was made at the end of three months and the red cells were found to be considerably decreased, with hemoglobin about normal. Another series of arsacetin injections increased the red cells again, while the hemoglobin still declined. Unfortunately during the next six months the patient did not return to the Clinic. At the end of that time he returned weak and anemic. Further injection of arsacetin and radium were without any influence on the blood picture. But the patient lived almost a year, in spite of the extremely low red cell count, dying finally of exhaustion.

"*Case No. 2* illustrated a kryptotenetic infection (generalized infectious lymphadenitis of unknown origin) with a pernicious anemic blood picture. He was treated with radium only. Five hundred micrograms radium element was given intravenously in all (400 at first; then an addition of 100 micrograms at end of four weeks). The rapid and steady increase in red cells was perhaps supported by radium. The patient is now in fairly good condition, but does not report for further observation.

"*Case No. 3,* one of leukemia, is incomplete."

The following is a report of a case of my own, with an apology for its incompleteness:

This patient lived nearly four years from the beginning of the attack, and as you will see, had the characteristic symptoms of this disease.

Mr. W. H. R., aged 57 years, married, and a farmer by occupation, came to my office April 7th, 1915, saying he was a boilermaker up to eight years ago. Since that time he has been farming. Has had chronic diarrhea off and on for four years. Commenced to feel bad about two weeks ago. Complains of palpitation of heart, shortness of breath, sleeps poorly at night, especially after 1 a.m. Bowels regular, no swelling of feet or face. Heart and lungs normal, pulse 108 and regular. Blood pressure: systolic 130, diastolic 60. Examination of urine, negative. Was put on purely symptomatic treatment and advised to return for a more careful study of his case.

April 16th, 1915, he came to my office, complaining of shortness of breath, aching in left hand and lower limbs, blowing noises in left ear, tongue sore and heavily coated. Gums and ears pale, eyes pearly yellow, skin had the characteristic yellowish discoloration of this disease. Pulse, 90. Examination of his blood showed: Hemoglobin 50%, erythrocytes 2,330,000, leucocytes 6,000. Marked poikilocytosis, macrocytes in abundance, also microcytes and megaloblasts. He was given Fowler's solution gtt. iii t.i.d., increasing 1 gtt. a day till effect, and Blaud's grs. v. before meals, acid hydrochloric gtt. ii, and elix. lactopeptin drachm i every four hours. This treatment varied from time to time as symptoms indicated. He was kept on arsenic in some form the most of the time, with sodium cocodylate in from 3/4 to 3 gr. doses hypodermically, or Fowler's solution by the mouth. He continued to improve on this treatment till his hemoglobin reached 80%, and his general condition became good.

One thing I should like to mention here is that the arsenic was given until he got the full effect. It was even carried further than I intended for he practically shed the skin of the palms of hands and soles of feet. He was able to resume his occupation of farming again about July 16th, 1915, and kept well for ten months. May 22nd, 1916, he returned to my office again, complaining of shortness of breath. The bowels were constipated, pulse normal, tongue slightly coated, very anemic (hemoglobin 35%). He was put back on the arsenic and iron treatment as before, and continued on this treatment till March 16th, 1917.

At this time he developed a mild case of la grippe. He seemed to lose ground for a time and got very weak and anemic, became very yellow, and suffered from shortness of breath on exertion. His hemoglobin varied, sometimes better, sometimes worse, but his general condition kept fairly good, although unable to do much work till January 4th, 1918, when he came back complaining of shortness of breath on the least exertion, and very anemic.

His liver was much enlarged, and he had developed a systolic murmur over apex of heart. His hemoglobin dropped to 25%. Strychnine gr. 1/30 and tr. digitalis gtt. X. t.i.d. were added to the treatment, but his condition gradually grew worse. He had reached the place where all forms of treatment failed to benefit him, but lived on till the fall of 1918, when he succumbed to this disease.

In conclusion, let me emphasize these facts, that in the light of our present knowledge pernicious anemia is an incurable disease, but life may be prolonged under selected treatment.

This has been proved by my own case, where the patient was kept alive nearly four years.

In summing up the treatment of this disease, I would say that arsenic in some form and transfusion of blood are the remedies par excellence. Splenectomy in the hands of such men as the Mayos has seemed to prolong life, although I cannot see where its real value has been proved.

I believe we should pay especial attention to the use of whole blood subcutaneously, as described by A. Waag in the *Munich Medical Journal*, for if this treatment proves to be as good as represented it will open up a new field for the general practitioner, remote from medical centers, who will be able to use this method of treatment without having to send his patients away for institutional treatment, thereby incurring unnecessary expense as well as the absence from his family.

These are important facts for us to consider, for you know how difficult it is for us to get our patients to leave their homes and go to a hospital.

If I have done nothing more in presenting this paper than to remind you of the necessity for us, as medical men, always to keep fighting to prevent the grim destroyer from depleting the ranks of our fellow beings, I have at least accomplished something.

EDITORIALS

THE RETURN TO REASON

Lawmaking in this "land of the free" of ours is a mysterious and wonderful procedure. If you doubt this, sit yourself quietly in the corner of any city council, state legislature, or national congress and watch the inscrutable wheels turn, listen to the unceasing flow of silver-tongued oratory, count the roll calls with most of the members in the cloakroom swapping jokes or spitting tobacco juice against the marble wainscoting; take in all this and more besides, and you will have a true-to-life picture of the great American people ruling themselves. Of course the most of the laws are sheer rot; how could they be otherwise? Can you squeeze blood out of a turnip? No, and you cannot get good laws out of poor legislators. But to discuss the personnel of our legislative halls would take us too far afield.

The thing that impresses us at this particular moment is the baneful effect of some laws, hastily passed, oftentimes voted for by men who feel opposed to the very thing they vote for, poorly constructed, badly written, inconsistent with the present law, and worse still, in violation of the Constitution. The Volstead Act strikes us as one such. By no stretch of the imagination should Prohibition ever have been made a part of the Constitution. This Constitution is to many of us a sacred document, our Magna Carta, our national Bill of Rights, and as such should be let alone. Prohibition by simple enactment of Congress would be just as much a law and just as much (or little) enforced as by constitutional amendment. However, the Supreme Court having ruled that the Eighteenth Amendment as a whole is constitutional, we have no option at present; it is the law, and must be respected. But what a pity that an amendment of only four lines could not be written so that the ordinary mortal could understand it, for the last half of it has been, and will be, a bone of contention for years to come. When Congress said "the Congress and the several states shall have concurrent power of legislation," it started something. What that clause really means, nobody, including the Supreme Court, knows. Some day the Court will be called upon to say what this clause means, and when that day comes we look for something new in the line of judicial pronouncement.

In accordance with the latter half of the Amendment, Congress, in its infinite wisdom, passed the Volstead Act, as the national enforcement bill, and expected the several states to pass the same Act as the act of the several states, making prohibition enforceable by both state and federal officers. But as above said, the Amendment was so wretchedly worded that states meaning to comply with prohibition as far as possible did not know what to do. Some reënacted the Volstead Act as the act of their state, some did nothing, and some played poker with the bill, saw the bet and went them one better. Such a state is Delaware, whose rural voters have seven votes to the city man's one; and whose rural representatives, while making wines for their own consumption, saddled on the state the most bigoted bone dry law in America. And these hypocrites in Delaware are matched in almost every other state. Even the Congress that passed the Amendment originally was reputed to have been composed ninety per cent of drinkers.

The most pernicious thing in the Volstead Act is the part that says, the Secretary of the Treasury, through the Prohibition Director, shall make and enforce suitable rules and regulations. In other words, Congress passed the act and then passed the buck. We take it that when we send our representatives to Washington we send them there to make the laws in toto, and not to delegate that function to some departmental flunkey or hickville bureaucrat. How long will the American people tolerate government by one man, even though that man be the annointed of Heaven? How long will we suffer some ten-dollar clerk to tell us what we can do and what we cannot do? And how long will we allow some single-track mind to throw us in court or clap us in iail by a mere sweep of the pen or a new regulation? Just so long as we permit it will we be the victims of one-man government; just so long as we elect the present stripe of legislators; just so long as we at home take no interest. After all, we have no right to rail at the bureaucrat; he fattens at the public trough because we let him; he makes his regulations because we let him; he makes his own laws because we send to Washington men too asinine or too lazy to make them for us. This continual delegation of the *legislative* functions to bureaus of the *administrative* departments is the most serious defect in our governmental system, aside from the fact that the government (administration) is all too frequently diametrically opposed to the people (Congress). Would to God we in America had the English system, whereby an adverse note in Parliament means the resignation of the Ministry, so that the government and the people may, theoretically at least, be constantly in accord. But as Kipling says, that is another story.

To get back to Brother Volstead. His bill as a whole has been declared constitutional by the Supreme Court in a decision that lacks much in clarity and conclusiveness, and the regulations under it, made by one of the aforesaid gentlemen, have been enforced with all the vigor possible (which in truth has not been much), and we as a profession have submitted to rules and regulations such as even the wildest advocate of prohibition never contemplated, to the point that we began to wonder if our vaunted freedom meant anything more than the Russian brand after all. More than one of our childhood faiths have been shattered of late—remember Thomas Jefferson's grandiose statement in the Declaration of Independence that "all men are created free and equal"; he didn't believe that any more than we do, for he kept his slaves till his dying day. And we of the medical profession have learned that *we* are not free (and we are not all equal), especially when it comes to the untrammeled practice of our profession. But just when we were about to give up all hope of ever finding a backbone in a medical man, just as we had almost admitted to ourselves that anything could be put over on the doctor and he'd take it, glory be, some of the Yankee medics of Manhattan Isle began to wonder if this slavery of ours to bureaucracy could not be removed. The only way to find out seemed to be by appealing to the courts, and this was done. An association, the Association for the Protection of Constitutional Rights, was formed, with Dr. Samuel W. Lambert, dean emeritus of the College of Physicians and Surgeons of Columbia University, New York, at its head. The remarkable thing about this Association is the fact that nearly all of its members are ardent "dry" men. Funds were raised, and the battle commenced in the United States District Court for the Southern District of New York, before Judge John C. Knox.

Dr. Lambert filed his action in November, 1922, claiming, in effect, that Congress was usurping the function of the physician in limiting the amount of liquor that might be prescribed to any one patient and asking that the State Prohibition Director, the Internal Revenue Department and the United States Attorney's office be restrained from molesting him in his avowed determination to ignore the provision, which he declared was illegal.

Judge Knox has just read a 3,000-word decision upholding his contention of unconstitutionality and granting the injunction asked.

Although, he said, the question of whether liquor is a valuable therapeutic agent is so highly controversial that a questionnaire directed to 30,000 physicians has resulted in a 51-to-49 vote in favor of the use of liquor in certain cases, Congress itself, "in the very legislation under attack," had recognized it as having a legitimate medical use.

"The difficulty," he continued, "is that having done so, Congress, without reference to the quantity of liquor actually required for the proper treatment of a particular ailment, and irrespective of the good faith, judgment and skill of the physician in attendance, proceeds to limit the amount to be prescribed to not more than a pint within a period of 10 days.

"The Eighteenth Amendment was designed to bring about the prohibition of intoxicating liquor for beverage purposes and was not, I think, intended to put an end to the use of liquor for purposes regarded by those who proposed the amendment and by many of the states that ratified it as justifiable and proper."

Such uses, he said, included its use for sacramental purposes, for medical purposes and for industrial purposes, pointing out that no limit had been placed on the amount that might be used for sacramental purposes.

"Instead of manifesting the same solicitude for the physical well-being of a person suffering from disease that it evinced for the spiritual comfort and welfare of members of certain religious sects," he continued, "Congress restricted in the manner complained of, the medicinal use of intoxicating liquors.

"If, as the complaint alleges, the administration to a patient of more than the statutory quantity of liquor is necessary for his relief from a certain known ailment, the inability of such patient to have his legitimate needs supplied means that he is subjected to a proposition that certainly is not within the terms of the Eighteenh Amendment and which it easily may be imagined, might subject him to serious consequences, if not death itself.

"While the exercise of regulatory power in the interest of the public at large frequently brings about individual hardship, it is to be recalled that one of the chief objects is to preserve and is not to jeopardize and destroy the health of its citizens. For this reason I feel that persons are not to be deprived of the use, when required, of such medicines as are proper and necessary for their relief, unless authority for such deprivation has expressly been conferred."

It was at this point that Judge Knox struck what many attorneys believed was a serious blow at the prescription restriction in the Harrison Act.

"All of us recognize," he said, "that the unregulated use of morphine, cocain and other habit-forming drugs may have most baneful effects; but who would say they should not, in a proper case, be prescribed by a competent physician?"

Returning to the question of whether the prescribing of liquor were "necessary" in certain cases, he interpreted "necessary" to mean "that which is desirable, advisable and needful," and continued:

"It would seem not to be a function of Congress, particularly under the amendment (Eighteenth) to invade, as it were, the domain of medical authority, and to deprive patients of what they need and by every principle of right and justice are entitled to have. Having assumed to do so, it would appear that the action does not constitute legislation appropriate to the object sought to be obtained through the adoption of the amendment.

"To me it seems reasonably clear that the right of the public to have available for its use an adequate supply of a valuable therapeutic agent, transcends the present power of Congress to decree otherwise upon the basis of expediency and policy."

It was within the power of Congress, he said, to pass more stringent laws, if necessary, in order to prevent abuse of the prescription writing authority, but any such regulations "must fall short of an actual prohibition against the use of liquor to the extent demanded by the reasonable necessities of the proper treatment of known ailments."

Congress, as a regulatory measure, might even limit the quantity of liquor to be prescribed if it determined by investigation a quantity that "reasonably and properly" might be required, he conceded, but he declared the present limitation appeared "arbitrary and without justification" on the basis of the facts alleged in the case before him, which had been admitted by the Government.

"I have reached the conclusion," he concluded, "that the limitations of the Volstead Act and its amendments, which make it lawful to prescribe but one pint of intoxicating liquor for the internal use of a person whose known ailment, if it is to be properly treated, requires the administration of a greater quantity, are void."

The logic of this decision is almost incontrovertible, and of course affects all physicians in Judge Knox's jurisdiction, yet Prohibition Commissioner Haynes immediately declared it applied to Dr. Lambert only, and that all other physicians in Judge Knox's territory must bring individual suits to be relieved of the present regulations. Such "bone-head plays" make apparent one reason, at least, why prohibition enforcement is such a ludicrous farce. He also stated that an immediate appeal would be taken to the Supreme Court, but the very next day the following appeared in the newspapers:

"Strong official intimations came from the Treasury Department that there would be a liberalization of the regulations governing the prescribing of medical liquor, and that the decision of Judge John C. Knox, of the Southern District of New York, might result in lifting altogether the ban on physicians' prescriptions.

"This impression, gained from higher officials of the Treasury Department and its prohibition enforcement machinery, is entirely at variance with the statement of Prohibition Commissioner Haynes issued immediately after Judge Knox rendered a decision saying the Eighteenth Amendment covered 'beverage liquors' and not 'medical liquors,' and Congress could not restrict the use of the latter.

"Commissioner Haynes sharply contended that the Knox decision was applicable to one doctor only who brought the action; that there would be an appeal, even as to this one case, and that other physicians throughout the United States must toe the mark.

"Secretary Mellon, David H. Blair, Commissioner of Internal Revenue, and legal advisers of the Treasury head are to hold a conference soon regarding the Knox decision.

"Meanwhile from sources close to Secretary Mellon, official chief of Commissioner Haynes, it was learned that Mr. Mellon is of the following tentative opinions:

"'Regulations of the Commissioner of Internal Revenue must apply to the whole country. There cannot be one regulation for physicians in Judge Knox's district and another for physicians outside that district.

"'There is a probability that "reasonable regulations" will be promulgated allowing physicians to exercise their own judgment in the prescribing of medicinal liquors.

"'There have been practically no complaints against physicians during prohibition enforcement. Should any physician under liberal regulations and the Knox decision abuse his privileges the Government can check him up.

"'Since Commissioner Blair was made a defendant in the New York action brought by Dr. Lambert, head of a physicians' organization, the Treasury Department and Commissioner Blair will have the deciding say as to whether there shall be an appeal.'"

We in Delaware, who have been particularly restive under the arrogant and unconstitutional Klair Law (this law violates both the state and national constitutions) greet this decision with more than usual interest. Yet in the face of all this, the State Prohibition Director says this decision has no effect in this state! The Klair Law will last just as long as it takes the physicians of Delaware to get *their* case in the Delaware Courts. For the past three years we have been urging the profession of this state to stop going to the Legislature and begging on bended knee for rights unconstitutionally denied us; we have, on the other hand, urged them to put their case in the court, where it belongs. We have been assured by the best constitutional lawyers in the state that we would win our suit. Now, with the inspiring example of our New York brethren before us, there must be no hesitancy; the next annual session of the Medical Society of Delaware must authorize and institute this suit. It will take Judge Knox and several other knocks to pound reason into the craniums of certain fanatics, both executive and legislative, but if this recent decision marks "the high water mark of the Confederacy," if it ushers in a reversion to constitutionalism, if it means a return to reason, God mark the day, and may it so prove.

W. E. B.

CALCIUM IN THE TREATMENT OF TUBERCULOSIS

The administration of lime salts in tuberculosis is one of the medical traditions which the profession has accepted without question.

Calcification of degenerated tubercles is nature's method of repair; the theory that demineralization takes place in tuberculosis has been advanced by unquestioned authority, notably the French. What can be simpler than the deduction that by the administration of lime both the demineralization is overcome and calcification of the tubercular lesions facilitated. Yet, the old adage, "you may lead a horse to water but you cannot make him drink," is particularly applicable in the domain of metabolism. Calcium, or any other drug for that matter, in the digestive tract is still outside the body so long as it is not assimilated and appropriated by the cells. This is almost a truism, and yet a frequently forgotten one by the physician.

In a recent contribution to the subject, Mary E. Mayer and H. G. Wells conclude from a review of the literature that "we have no experimental proof that the administration of calcium, either by mouth or otherwise, increases the amount of calcium deposited in tubercles or other necrotic areas." These authors performed exhaustive experiments on animals, showing that decalcification or demineralization does not take place in tuberculosis, and, furthermore, that feeding of calcium fails to increase the calcium content of the blood. While it appeared that tuberculous tissues do show a tendency to an accumulation of calcium, this tendency is not influenced one way or another by the administration of lime salts; nor could the slightest effect on the course of the infection be demonstrated.

O. Barkus, working in the Saranac Laboratory, failed, in his experiments on animals, to detect any appreciable loss of calcium as a result of progressive tuberculosis. His findings are in accord with those of a number of investigators who have studied the subject.

The time honored argument that clinical evidence is of greater value than the results of experiments on animals, and that the administration of lime salts has proved of value in the hands of such famous clinicians as Robin, Von Noorden, Hamburger, Van Giesen and others of equal authority—this argument may be controverted by the well-known fact that clinical observations, unless rigidly controlled, are of no value. This is particularly the case in tuberculosis, a disease of long duration and most striking variations in the clinical picture. One recalls with a painful sense of disillusion the various and sundry remedies extolled from time to time as curative agents in the treatment of tuberculosis and vouched for by eminent authorities on the basis of clinical observations. The list is long: creosote and its derivatives, aniline, menthol, eucalyptol, sulphuretted hydrogen, hydrofluoric acid, iodoform, carbolic acid, arsenic and its derivatives, various bacterial products and vaccines, from tuberculin to the turtle bacillus vaccine, superalimentation, and other remedies too numerous to mention. Each had its day in court and after a short-lived glory faded into well merited oblivion.

The hypophosphites are dying hard largely because of extensive and intensive commercial boosting, but their day, too, is coming to an end.

In the light of scientific investigations the dazzling glamor of the therapeutic virtues of mineral salts and phosphorus will fade like the others have, and the era of unreasoning empiricism will come to an end. God speed the day!

A. R.

PERSONAL

DR. GEORGE W. K. FORREST, at present police surgeon, is the Republican candidate for Mayor of Wilmington. The election is next month.

DR. JOHN M. STADTER, Democrat, and Dr. Victor G. Washburn, Republican, are candidates for President of the Council.

GOVERNOR DENNY has not yet announced the personnel of the new Public Health and Welfare Commission. The law requires four physicians to be appointed, together with three lay women.

GENERAL NEWS ITEMS

A FURTHER STUDY of the hydatidiform mole has been undertaken at the Chicago Lying-in Hospital and Dispensary, especially in regard to the frequency of malignancy following this condition. An attempt is being made to collect case reports from outside physicians. Cases reported by physicians will be greatly appreciated and the physician will be given due credit in any literature published. Address communications to Robert B. Kennedy, M.D., Chicago Lying-in Hospital, Chicago, Ill.

HOW NEW YORK STATE IS WIPING OUT BOVINE TUBERCULOSIS

The tuberculous cow—a great menace both to the human as well as to the bovine race—is to go, said the New York State Department of Health in an address broadcast from Radio Station WGY of the General Electric Company at Schenectady. For years New York State has been struggling with the problem of preventing tuberculosis in its herds, but only recently have rapid strides been made toward the complete eradication of this disease among dairy cattle.

But why distress ourselves over the fact that cows (or any other animals) have tuberculosis? The answer is that human beings may be infected with tuberculosis by drinking milk from tuberculous cows. The danger to adults from this source is probably slight, but undoubtedly it is very great to small children. Especially is this true for children under five years of age, who are very likely to contract tuberculosis of the bones and glands through drinking milk from tuberculous cows. Therefore, for the protection of the health of our children we must eradicate the disease in the cows from which we get our milk.

Essex County, in northern New York, is the first county in the state to exterminate bovine tuberculosis within its borders. By proclamation it has been declared practically free from this disease and placed under quarantine to prevent reinfection. Undoubtedly Steuben County will soon have equal distinction.

The plan by which these results have been achieved is generally known as the "accredited herd" plan which is carried out under the supervision of the U. S. Department of Agriculture working with the state authorities. The principal features are (1) the systematic testing, by means of tuberculin, of all the dairy cattle within a certain area, usually a county, by a specially qualified and licensed veterinarian; (2) the slaughter of all "reactors," namely cattle found to have the disease; (3) the compensation of owners for losses thus sustained, from state and national funds; (4) the prevention of reinfection by prohibiting the introduction of cattle which have not been tested; and (5) the systematic annual retesting of such herds to insure their permanent freedom from the disease. Such herds when permanently freed from tuberculosis receive a certificate as "accredited herds."

The problem of controlling tuberculosis in cattle is a large and difficult one. Thus far in New York State alone, over 1,000 herds have qualified under this accredited herd plan and the total number of cattle in New York State under supervision is close to 400,000. So rapidly is the demand for this supervision growing that it is impossible to keep pace with it; at the present time some 5,000 herds comprising over 150,000 animals are waiting for the test, for breeders have come to see that an accredited herd certificate is a real business asset. It means a broader market and a higher price for their stock, a better price for the milk, and perhaps, most important of all, it is an insurance of the health of the farmer and his family and the health of their most valuable stock in trade, namely, the dairy herds.

That the state authorities realize the necessity for strenuous action to eradicate bovine tuberculosis is shown by the fact that the Legislature which has just adjourned appropriated $2,500,000 to pay farmers for tuberculous cattle already slaughtered and the same amount to compensate owners whose cattle will be killed as tuberculous during the coming year.

If the farmers of the state will coöperate in this work of ridding their herds of infected animals, they will not only be getting rid of cows that are not even paying their board, but they will be safeguarding the lives of their own children and the children of others.

The Model Milk Code for cities, recently drafted by the State Department of Health and the New York State Conference of Mayors, is especially designed to eliminate danger from tuberculous infection through milk in the cities which adopt these regulations. Under the proposed ordinance the only milk from untested cattle permitted to be sold is Grade B milk and for this very reason the ordinance requires all Grade B milk to be pasteurized. Those who prefer raw milk can still obtain it under this ordinance which permits the sale of Grade A raw milk. All raw milk of that grade, however, must come from tested cows.

The Federal Department of Agriculture has produced an excellent moving picture telling in story form of the risk which the farmer runs in his own household in using milk from tuberculous cows, which is proving very useful in educating both dairymen and milk consumers to the importance of keeping cows healthy. This picture, called "Out of the Shadows," has been used extensively by the farm bureaus and has proved so valuable from the standpoint of human health that the New York State Department of Health has purchased a copy for use in that state.

In a cemetery in the outskirts of Honrilla is a tombstone of granite which bears the following inscription:

Here lies Hermando Sagaz,
Of gratitude unexcelled.
In his will he directed
That his physician be paid first.
Erected to his memory
By the grateful physicians of Honrilla.

—*O. Pine.*

Dr. O. Pine queries: Is not the calling of names a wonderful expedient when real arguments are lacking? If your confrere has the best of the controversy, why not pattern after the latest approved method of styling the opponent and his ideas as Bolshevik? Neither he nor you may know what the term actually signifies; consequently, how can he reply intelligently?

BOOKS RECEIVED

Nursery Guide. For mothers and nurses. By Louis W. Sauer, M.A., M.D., Senior Attending Pediatrician, Evanston Hospital. Illustrated. St. Louis: C. V. Mosby Company, 1923. Price $1.75.

Collected Papers From the Washington University School of Medicine. Volume 1, 1921, with 347 illustrations. St. Louis: C. V. Mosby Company, 1923. Price $12.00.

The Surgical Clinics of North America, April, 1923. Volume 3, No. 2, New York Number. Published bi-monthly by W. B. Saunders Company, Philadelphia and London.

Clinics and Collected Papers of St. Elizabeth's Hospital, Richmond, Virginia. Volume of 1922. Contributed by the staff. St. Louis: C. V. Mosby Company, 1923. Price $7.50.

Merck's Manual of the Materia Medica. A ready-reference pocket-book for the physician and surgeon. Compiled and published by Merck & Co., New York, 1923. Price 50c.

Rules for Recovery From Pulmonary Tuberculosis. A Layman's Handbook of Treatment by Lawrason Brown, M.D., Fourth edition, thoroughly revised. Lea & Febiger: Philadelphia and New York, 1923. Price $1.50.

Practical Local Anesthesia and Its Surgical Technic. By Robert Emmett Farr, M.D., F.A.C.S., Minneapolis, Minn. Illustrated with 219 engravings and 16 plates. Lea & Febinger: Philadelphia and New York, 1923. Price $8.00.

Diseases of the Nervous System. A Textbook of Neurology and Psychiatry. By Smith Ely Jelliffe, M.D., Ph.D., and William A. White, M.D. Fourth edition, revised, rewritten and enlarged. Illustrated with 475 engravings and 13 plates. Lea & Febinger: Philadelphia and New York, 1923. Price $9.50.

The Principles and Practice of Perimetry. By Luther C. Peter, A.M., M.D., F.A.C.S., Professor of Ophthalmology in Temple University Medical School and in The Graduate School of the University of Pennsylvania. Second edition, thoroughly revised. Illustrated with 161 engravings and 5 colored plates. Philadelphia and New York: Lea & Febiger, 1923. Price $4.00.

Nonsurgical Drainage of the Gall Tract. A treatise concerned with The Diagnosis and Treatment of Certain Diseases of the Biliary and Allied Systems in Their Relation to Gastro-enterology and General Clinical Medicine. By B. B. Vincent Lyon, A.B., M.D., Chief of Clinic, Gastro-Intestinal Department of the Jefferson Hospital, Philadelphia. Illustrated with 175 engravings and 10 colored plates. Lea & Febinger: Philadelphia and New York, 1923. Price $10.00.

Studies in the Standardization of the Wassermann Reaction With the Description of a New Method. By John A. Kolmer, Professor of Pathology and Bacteriology in the Graduate School of Medicine of the University of Pennsylvania and Head of the Department of Pathology in the Research Institute of Cutaneous Medicine of Philadelphia. From the Research Institute of Cutaneous Medicine, Dr. Jay F. Schamberg, Director.

Legal Medicine and Toxicology. By many specialists. Edited by Frederick Peterson, M.D., Manager Craig Colony for Epileptics; Walter S. Haines, M.D., late Professor of Chemistry, Materia Medica and Toxicology, Rush Medical College; and Ralph W. Webster, M D., Assistant Professor of Medical Jurisprudence, Rush Medical College. Second Edition. Two octavo volumes, totalling 2268 pages, with 334 illustrations, including 10 insets in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $20.00 net.

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA.

January, 1923. Vol. 6, No. 4. Philadelphia Number. Philadelphia and London: W. B. Saunders Co.

This is an especially interesting number of the Clinics, and may be considered as representative of the work done in the large teaching institutions of a metropolitan medical center. Articles on the following topics are presented: (I) Hypertension and Nephritis and (II) The Early Treatment of Empyema by Aspiration, by Dr. Thomas McCrae; Arterial Blood Pressure in Heart Disease, by Dr. C. C. Wolferth; Coronary Thrombosis, by Dr. David Riesman; Aneurysm of the Aorta—Effects on the Coronary Circulation, by Dr. Robert G. Torrey; Tuberculous Pleurisy — Cardiac Aneurysm, by Dr. George William Norris; Tuberculous Epididymitis Terminating in Tuberculous Meningitis, With Xanthochromia of the Spinal Fluid, by Dr. Baxter L. Crawford; (I) Addison's Disease and (II) Hemolytic Jaundice, by Dr. James M. Anders; Pigment Metabolism and the Van der Bergen Test to Differentiate Obstructive and Non-obstructive Jaundice, by Dr. Harold W. Jones; Basal Metabolism Studies in the Differential Diagnosis of Conditions Resembling Hyperthyroidism, by Dr. Henry K. Mohler; Influence of Infection on Carbohydrate-tolerance in Diabetes Mellitus, by Dr. Richard A. Kern; Renal Glycosuria, by Dr. Leon Jonas; (I) Syphilis with Pulmonary Manifestations and (II) Diabetes and Tuberculosis, by Dr. Elmer H. Funk; (I) Diabetes Mellitus with Slight Acidosis and (II) Septic Meningitis Secondary to Otitis Media, by Dr. O. H. Perry Pepper; (I) Syphilis of the Kidney and (II) Carcinoma of the Stomach in Association with a Positive Wassermann Reaction and a History of Chancre, by Dr. Truman G. Schnabel; Peritonitis Carcinomatosa Complicating Schirrhous Cancer of the Stomach, by Dr. T. Grier Miller; Tumors of the Mediastinum, by Dr. Joseph Sailer; Lung Suppuration Caused by Prolonged Sojourn of Foreign Body, by Dr. Chevalier Jackson; Bronchoscopic Drainage of Pulmonary Abscesses and Bronchiectasis, by Dr. R. M. Lukens, Dr. W. F. Moore, and Dr. E. H. Funk; Profuse Hemoptysis, by Dr. Edward Weiss; Unusual Types of Leukemia, by Dr. John H. Musser, Jr.; Staphylococcus Aureus Septicemia, by Dr. Albert E. Bothe. A. A. E.

THE EVOLUTION OF MODERN MEDICINE.

A Series of Lectures Delivered at Yale University on the Silliman Foundation in April, 1913, by Sir William Osler, Bart., M.D., F.R.S. Yale University Press, New Haven, 1921.

An address, a dissertation, a medical paper, or a volume upon any subject over the name of William Osler will be equally sought and read by thousands of devoted friends. Probably no one during the past fifty years has formed so many warm personal friends. No one certainly has done so much for medical education or inspired so many enthusiastic students. This book furnishes entertainment, inspiration, and encouragement.

Dr. Osler had but three hobbies—medicine, education and bibliography. Endowed with most unusual industry, a phenomenal memory, a keen appreciation of relative values, a fascinating facility of expression, and a long life for the zealous development and application of his talents, no one has ever been so well fitted to write the history of medicine. While deeply grateful for this "aëroplane flight" which the author has left us as a priceless legacy, we can but regret that he did not have the inspiration and the opportunity to give us a more voluminous work. As it is, the present volume gives a comprehensive insight into the development of the art and science of medicine, with a remarkable evaluation of the work of all contributing nations.

The lurking humor and the warm personal touch, so characteristic of all Osler's writings, pervade every page as the story unrolls like an unbroken parchment from Babylon to Oxford.

The editors have acquitted themselves well. We can only suggest a fuller index in order to make this treasured volume more valuable for ready reference. L. L.

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. Fifth Edition. By Anthony Bassler, M.D., F.A.C.P. Published by F. A. Davis Company, 1922. Price $8.00.

The fifth edition of this very serviceable textbook brings the subject well up-to-date. The author approaches his subject from the clinical rather than the ultra scientific viewpoint.

In places here and there throughout the book there is much obscurity as to the meaning, such as on page 104: "When considered in connection with other symptoms, the phenomenon may have some value, but this is very limited, and too many impossible to accurately distinguish other causes may give these sensitive areas and thus lead to the error of supposing that internal disease exists; such as where the spots are due to hysteria, uremia, neuralgia and central neurological affections, etc." And page 110: "My experience in diagnosing ptosed and dilated states of the stomach, the comparison between where the tympanic note of the upper border in the two positions is situated is of more value than in examining for the position of the greater curvature—in the upright position the proximity of the transverse colon to the lower border of the stomach is often most confusing."

Such jumbling of the text "is often most confusing" to the reader who tries to interpret the thought of the writer. In his next revision the author should make the reading smoother in many places, for the thought he wants to put over is worthy of a better conveyance than he uses, as illustrated above.

The book is recommended to the general practitioner for much valuable information gleaned from the author's many years of clinical experience. A. C. M.

RECIPES FOR INSTITUTIONS, edited by the Chicago Dietetic Association and published by Macmillan Company, New York, is a compilation of recipes prepared by seventy dietitians of the American Dietitians' Association, who are engaged in institution, cafeteria and tea room work.

The greater part of the work deals with recipes for soups, meats, vegetables, salads, dressings, sandwiches, cakes, pies, desserts, etc., while the remaining portion, a very small part of the text, deals with special diets that may be used in such diseases as nephritis, diabetes, constipation, anemia and typhoid fever.

The book is not a dietary guide for institutions in any sense of the word, but is wholly a compilation of, as stated in the text, "Recipes for Institutions." These recipes are of a large variety with quantities and servings indicated. The book will serve well its purpose in any culinary department. J. A. J.

MANAGEMENT OF THE SICK INFANT, by Langley Porter, B.S., M.D., Professor of Clinical Pediatrics, University of California Medical School, and William E. Carter, M.D., San Francisco. 654 pages, with 54 illustrations. St. Louis: C. V. Mosby Company, 1922. Price $7.50.

One of the strongest features of this book on pediatrics by Porter & Carter is the expression of personal experiences in diagnosis and treatment.

It is unique and so different from most other books on this subject that it commands attention.

The first chapter should be memorized by the young practitioner for it contains many valuable points. These are fundamental in pediatrics and are not routinely considered by physicians who do not specialize in this subject.

The presentation of the main symptoms in diseases of infants under special chapters makes the book valuable for ready reference.

The treatment of special diseases in part II is indefinite, thus leaving much to be desired.

Methods described in part III certainly are very academic and omit no detail. Perhaps experience in the use of these various methods makes the details seem too elementary but nevertheless, when followed step by step, one certainly can make no mistake.

As every pediatrician must be a dietitian, even to the detail of preparing foods and formulas for the first time, chapter XXII is a careful explanation of this important part in the treatment of sick children and is a valuable part of the book.

The chapters on drugs may cause much comment and even criticism.

One must remember these prescriptions have been used successfully *by the authors* in the treatment of the various conditions mentioned but are not "cure-alls."

For instance, the prescription suggested for cough of pertussis is rather formidable and suggests "polypharmacy," but may have proved very valuable to the authors.

As a whole the book is instructive, well written and a valuable addition to pediatric literature.

H. T. PRICE.

RADIUM THERAPY. By Frank Edward Simpson, A.B., M.D., Professor of Dermatology, Chicago Policlinic; Adjunct Clinical Professor of Dermatology, Northwestern University Medical School; Attending Dermatologist to Mercy Hospital, Alexian Brothers Hospital, Henrotin Hospital, etc. Cloth, 391 pages, with 166 original illustrations. St. Louis: C. V. Mosby Company, 1922. Price $7.00.

The author is a well-known dermatologist, and possesses an international reputation for an experience and success in the use of radium as a therapeutic agent which is exemplified in the book he has produced for the benefit of others. All the necessary details of the methods of applying radium based upon his wide experience are imparted to the reader in a very concise and convincing manner. This is a very important textbook and reference work for all those who practice radiotherapy, whether in connection with dermatology or in the treatment of other conditions in which it may be employed.

The opening chapters deal with the history of radioactive discoveries, the origin and methods of extraction of radium, the physics of radioactive changes, the preparation and measurement of the emanation, filtration and absorption of radioactive products. This section of the book which deals with physics is accurate, concise and easily understood. A very important chapter is devoted to the biologic effects of the products of radium decay. Ample attention is given to the general methods of application, special technic and the estimation of required dosage.

The last half of the book is devoted to the special methods of application and the indications and results of radium radiation in various disease conditions. The details are sufficient for reference in connection with conditions which are frequently treated with reasonable success, and mention is also made of many other conditions in which radium has been employed with only occasional results or no success.

HENRY K. PANCOAST.

OPTICAL METHODS IN CONTROL AND RESEARCH LABORATORIES, by J. N. Goldsmith, Ph.D., M.Sc., F.I.C.; S. Judd Lewis, D.Sc., B.Sc., F.I.C., Ph.C.; F. Twyman, F. Inst. P. Vol. I. (Second Enlarged Edition, November, 1922.) Spectrum Analysis, Absorption Spectra, Refractometry, Polarimetry. Published by Adam Hilger Ltd., London, England. Royal 8vo., pp. 56+iv. Limp Cloth, 1s. 6d; post free, 1s. 8d. With three photogravure plates.

The optical methods dealt with in this book are those employing spectroscopes (or spectrographs), spectrophotometers, refractometers, and polarimeters. No detailed descriptions of these instruments or their technique are included, but in each case references are given to sources of information on these points.

The book is published by a well and favorably known firm of manufacturers of spectrometers, refractometers and polarimeters. There is presented a good sketch of the present fields of practical application of the stated optical instruments. It is suggestive rather than descriptive and "is intended as an introduction to the uses of the above instruments, as a guide to their selection, and as an index to further sources of information concerning their employment in control and research laboratories." G. H. MEEKER.

HANDBOOK OF ORGANIZATION AND METHOD IN HOSPITAL SOCIAL SERVICE, by Margaret S. Brogden.

Miss Brogden's working manual for Hospital Social Service is a most compact, clear and useful guide, so orderly and complete in detail that it should fill admirably the need to-day for standards and system in a comparatively new kind of work. One reads with special pleasure the short, clear paragraphs with no "frills," and the heart of the matter unmistakable.

The reasonableness of the instruction for getting the human problem's solution, avoiding "comings and goings without an accomplished goal," is made plain. The noteworthy placing of the record in its right relation to the whole service, as not an exalted end in itself, yet, painstakingly kept, indispensable to "blue-ribbon" achievements, a "tool to be made keen and kept available," is an idea suited to wide application in all kinds of health and welfare work to-day.

The fact that the volume has grown out of ten years of active service and study, and has only the essence of what has proved useful, and further, that it has found its place among the students of the New York School of Social Work can only mean a wide acceptability in the world of Social Service. M. R. NOBLE.

THE MEDICAL CLINICS OF NORTH AMERICA. March, 1923. Vol. 6, No. 5. Ann Arbor Number. Philadelphia and London: W. B. Saunders Co.

This number of the Clinics contains articles of varied interest on subjects as follows: Hodgkin's Disease of the Mediastinal Glands and Lymphosarcoma, by Dr. L. M. Warfield; High Fat Diet in the Treatment of Diabetes Mellitus, by Dr. L. H. Newburgh; Contra-indications to the Intensive Treatment of Syphilis, by Dr. U. J. Wile; "Painful" Women, by Dr. H. Cabot; Roentgen Ray Treatment of Skin Diseases, by Dr. C. K. Hasley; The Psychopathic Personality, by Dr. A. M. Barrett; Chorea and Choreiform Affections, by Dr. C. D. Camp; Splenomegaly, with Acholuric Jaundice, by Dr. L. D. Stearn; Pericarditis, by Drs. F. R. Wilson and C. R. Hills; Chronic Pancreatitis, by Dr. P. L. Marsh; Endocarditis, Purpura Hemorrhagica, by Dr. G. R. Herrmann; Pyloric Obstruction, by Dr. J. B. Youmans; Peptic Ulcer, by Dr. I. W. Greene; and a series of clinics from the Department of Pediatrics and Infectious Diseases, (Tuberculosis of Glands and Bones, Diphtheric Paralysis, Granuloma Rubra Nasi, Tuberculosis Cutis, Vomiting of Infants, Hodgkin's Disease, by Dr. D. M. Cowie; Acute Lymphatic Leukemia, Typhoid Spine, by Dr. W. S. O'Donnell; Syphilis of the Central Nervous System in Children, Splenic Anemia of Hypoplastic Type, by Dr. R. M. Greenthal; Madelung's Deformities, by Dr. G. M. Brown; Enlarged Thymus, by Dr. J. P. Parsons; Familial Corpus Striatum Syndromes, by Dr. L. A. Hoag. A. A. E.

ANIMAL PARASITES AND HUMAN DISEASE, by Asa B. Chandler, M.S., Ph.D., Instructor in Biology, Rice Institution, Houston, Texas. Second edition, revised. Published by John Wiley & Son, Inc., 432 Fourth Ave., New York. 572 pages; 254 clearly reproduced figures. Price $4.50 postpaid.

This is a very important subject and has been written by one who has had a great deal of experience in this connection. It has been written chiefly for the general public because the author feels there is considerable lack of knowledge concerning this phase of medical work.

Special emphasis has been laid on the biological and practical aspects of the subject and attention has been paid to the effects of the parasites on the human host. Besides being of help to the general public it is a book that will assist physicians, public health officers and nurses, particularly those who are interested in public health work because it gives clearly the essential facts concerning parasitic diseases and explains it in such a way that the underlying principles can be fully understood and followed out.

The second edition is a revision of the former one, bringing it up to date in this field of endeavor. Some of the changes are in connection with the recent work on yellow fever, a treatise on the Rickettsia or like organisms, revision on the chapter relative to amebæ and intestinal flagellates and ciliates. There is also a very interesting account of trench fever, and many other interesting features have been added to the work.

The reviewer does not hesitate to recommend it, therefore, to all who are interested in this subjct. F. F. D. R.

PRINCIPLES AND PRACTICE OF INFANT FEEDING, by Julius H. Hess, M.D., Professor and Head, Department of Pediatrics, University of Illinois, College of Medicine; Chief, Pediatric Staff, Cook County Hospital, Chicago, Ill. Illustrated. Third revised and enlarged edition. Published by F. A. Davis Co., Philadelphia. Price $4.00 net.

The fact that this work has been revised upon three different occasions shows it has met with favor by the medical profession.

The author has had a large experience in this particular line of work, and has divided up the contents of the volume into general conditions, including anatomy and physiology of the digestive tract, sketching the metabolism in infants and the bacteria of the digestive tract. He then takes up in order the nursing of the infant, artificial feeding, nutritional disturbances in artificial feeding of infants. The latter is gone into in detail and is very interesting and helpful.

There are thirty-four illustrations and nineteen tables given. The chapters on vomiting, colic, flatulence, constipation and abdominal stools have been completely rewritten. Other phases of the work have been revised to conform with the latest researches. Also new chapters relative to rickets, scurvy, spasmophilia, acidosis, anemias in infancy have been added. F. F. D. R.

Dr. O. Pine queries: In the city of Medical Bluffs, ten thousand "Swat-the-Fly" posters were circulated by one hundred mighty and valiant shielded and uniformed petty political heelers created sanitary inspectors by the magic wand of the political tyrants of the city; one hundred medical orators and two imported celebrities, on innumerable occasions, in eloquent and non-eloquent dissertations, advised fifty highbrow and medium-brow civic bodies and women's clubs how to demolish the fly enemy with scientific efficiency; the mayor proclaimed a "Swat-the-Fly" week; prizes were offered to the children turning into the "Civic Swat-the-Fly Campaign Headquarters" the ten greatest numbers of the dead enemy; a medley committee of politicians, educators, clergymen, physicians, moving picture artists, and chronic public posers awarded graded prizes to the ten best essays on "Swat-the-Fly" by high school pupils, and

During the carnage, 100 uncovered garbage wagons, five hundred uncrowned garbage cans, two hundred open manure boxes and one hundred blind sanitary inspectors, one seat-bound health bureaucratic dignitary, one highly decorative mayor, and the score of tyrants who imposed them upon the servile populace, pursued their usual and well-precedented course. How many flies were left after this Napoleonic-like campaign of colossal carnage? Reader, do you live in Medical Bluffs? And are you one of the "Great Bluffed?"

AN APPRECIATIVE MEMBER

The Secretary of the Northampton County Medical Society has sent in the following self-explanatory letter, as well worth the perusal of other members of the Society:

My Dear Secretary:

I herewith inclose my check for ten ($10) dollars, payable to the Society, for which please forward me the official receipt.

It may please you and the members to know, or see a statement, of what I credited myself with for value received for the 1922 year's dues of ten dollars. It is as follows:

1. The pleasure of attending eleven (11) regular meetings—monthly.
2. Eating and enjoying eleven (11) dinners at the expense of the Society.
3. Reading twelve issues of the State MEDICAL JOURNAL.
4. Protection from alleged malpractice suits for one year.
5. The protection afforded for one year in the Medical Relief Fund.
6. The benefit of membership in the American Medical Association—to fellowship therein.
7. The participation and benefits of organized medicine.
8. The enjoyment of listening to the "devil" getting his dues.

What more could one want for the ten ($10) dollars? I am, as ever and ever,

Very truly yours,

A MEMBER.

CONGENITAL SARCOMA OF KIDNEY IN A CHILD OF TWENTY-NINE DAYS

Clyde Leroy Deming, New Haven, Conn. (*Journal A. M. A.*, March 31, 1923), reports a case to emphasize (1) the value of complete cystoscopic examination in children; (2) that urograms are just as essential in the examination of infants as in that of adults, and (3) that local anesthesia may be used for nephrectomy in infants.

THE SAN FRANCISCO SESSION

ALPHA KAPPA KAPPA BANQUET

The Alpha Kappa Kappa fraternity has arranged for a banquet to be held on the evening of June 28th. All members attending the annual session are strongly urged to communicate with the chairman of the banquet committee at 100 Judah Street, San Francisco. Sigma chapter's new home at this address will be open to all members, and opportunity will be afforded them to register as soon as they arrive. Dr. Louis W. Achenbach is secretary of the chapter.

BRING YOUR BLUE FELLOWSHIP CARD

Registration will be made much easier for Fellows and for the Registration Bureau at San Francisco if each Fellow will bring his Fellowship card for 1923, and present it when registering. Complete instructions about registration will appear in the San Francisco Number of *The Journal*, to be issued during the month of May. All Fellows who have been reported to the American Medical Association for enrollment as members of constituent state medical associations and who have paid their Fellowship dues have had 1923 blue Fellowship pocket cards sent them.

MEETING OF THE MEDICAL VETERANS OF THE WORLD WAR

There will be a meeting of the Medical Veterans of the World War at 2:30 p. m., Tuesday, June 26th, at the Civic Auditorium in San Francisco. Lieut.-Col. Bertram F. Alden, San Francisco, is the chairman of the local committee of arrangements of this organization, and Dr. Arthur T. McCormack of Louisville, Ky., is president of the Medical Veterans.

INVITATION TO MEMBERS OF SECTION ON OPHTHALMOLOGY AND SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Members of the Section on Ophthalmology and of the Section on Laryngology, Otology and Rhinology are extended a most cordial invitation to stop off at Omaha, on their way to San Francisco to attend the annual session of the American Medical Association, to play golf. Dr. Clarence Rubendall, Brandeis Theater Building, Omaha, will advise those interested concerning arrangements that have been made for their convenience.

GOLF AND COUNTRY CLUB ENTERTAINMENT

An attractive program, including two tournaments, has been arranged for golf enthusiasts. Through the activities of Dr. James Eaves, chairman of the Committee on Golf and Country Clubs, the coöperation of all golf and country clubs throughout California has been obtained. Fellows visiting San Francisco during the session will receive any desired information relative to golf by communicating with the chairman or any member of the golf committee at headquarters or at the Civic Auditorium.

Tournaments are arranged for Fellows of the American Medical Golfing Association, and also a tournament for Fellows not members of this organization at the San Francisco Golf and Country Club and at the Lakeside Golf and Country Club, respectively, Monday, June 25th. Other tournaments will also take place during the week of the session, in and around San Francisco and various parts of the state. All Fellows, and particularly those members of the American Medical Golf Association who desire to take part in the tournament, are requested to communicate with the chairman, Dr. Eaves, 808 Balboa Building, San Francisco, as soon as possible.—*Jour. A. M. A.*, April 28, 1923.

THE COMMON SOURCES OF ERROR IN LUNG EXAMINATIONS

E. A. Duncan, El Paso, Texas (*Journal A. M. A.*, April 28, 1923), asserts that the considerable number of erroneous diagnoses of pulmonary tuberculosis are almost always based on or supported by descriptions of nonexistent or misinterpreted physical signs. Any single sign of increased pulmonary density, especially at the apexes, unaccompanied by other evidence, must be regarded as insufficient and conclusions therefrom withheld. This applies equally to alterations in fremitus, percussion changes and abnormal breath sounds. The misleading differences in the physical signs of the two sides must be kept in mind. Vigilance on the part of the examiner to recognize fictitious accentuations of breath sounds, extrapulmonary noises of cartilaginous origin and marginal sounds is essential to correct diagnosis. The elicitation of provoked râles requires a considerable reduction of pulmonary volume by expiration followed by cough. Basal bronchitis without upper lobe involvement must be proved tuberculous by the laboratory before such diagnosis can be made.

Dr. O. Pine queries: Why does the average public health medico become so soon "a thing apart" from the profession after he has spread his official wings? Does the political breeze cool his former fraternal instincts?

THE NATIONAL BOARD OF MEDICAL EXAMINERS

With the state board statistics published this week appears also statistics showing the results of examinations held by the National Board of Medical Examiners. During the first six years of its existence, the National Board held eleven examinations. Each was held in a large city, and those wishing to take the examination, unless they happened to live in that particular city, were required to travel long distances in order to take the examination. As a consequence, only 325 candidates were examined and 268 certificates issued—an average of forty-five each year. At the beginning of the board's activities, in an editorial comment, *The Journal* urged the adoption of an arrangement whereby the examinations could be held simultaneously in different cities, so that candidates would not need to spend so much time and money to take them. During 1921, therefore, the plan was adopted whereby the examination was divided into three parts, or three examinations, one at the end of the second year, one at the end of the fourth year, and one after the graduate has completed his internship. An arrangement was made also whereby the first two examinations could be taken in any Class A medical school, and the third examination, which is entirely clinical and practical in its nature, could be taken in any one of fifteen large cities distributed in various parts of the country. The new plan has been a great success, as shown by the fact that in the first year 412 candidates were examined, eighty-seven more than were examined in all six previous years. It is interesting to note that the examinations held by the National Board are now widely recognized by state licensing boards. As noted in the statistics, holders of the certificate are now eligible for registration without further examination in twenty-three states, and it is only a matter of time when the certificate will be recognized by all state boards. It is already being regarded as an evidence of excellent qualifications both in this country and abroad. The certificate, therefore, even now, has a value far greater than the money and time required by the student to take the examination.—*Jour. A. M. A.,* April 28, 1923.

WHAT'S A HEALTH EXAMINATION, ANYWAY?

Most people have had the experience of going to a doctor for an examination at some time in their lives, some have had to go many times. Usually they have gone because there was something wrong with them, pain, fever, a cough, a rash or what not, but anyway, something for the doctor to study, give a name to and prescribe for. But imagine the factory manager who waits for the machinery in his plant to break down before he gives thought to having it overhauled—how long would he keep his job? Is his machinery more important or more liable to accidents than that of your body? Don't you think it would pay to have it overhauled before the breakdown comes and to see if the machinery is really being run efficiently?

In the June issue of *Hygeia,* Dr. Haven Emerson, professor of public health in Columbia University, gives reasons enough to convince the most skeptical that health examinations pay, not only in increased health, but also in dollars and cents. "It has grown to be a custom" for people who employ men and women in large numbers in shops and factories "to have each new employee examined to see if he or she is in sound health." And again, "Many of the unions are requiring an annual health examination of their members because they have found this the best way to prevent the illnesses which cost their sick benefit funds so much." If these people who are in big business find it worth while and economical, there is probably something to it.

VACATION TYPHOID FEVER

Many attacks of typhoid fever are contracted by drinking the water supplied at camps and vacation resorts, bathing in polluted river water, or drinking contaminated milk. Vacation typhoid fever is a real danger. When there is the least doubt, boil the water and the milk; always insist on thorough screening of food from flies.—*From Hygeia.*

ANALYSIS OF METHODS OF MODERN MEDICAL EDUCATION

The reorganization of medical education is considered by William Cogswell Clarke, New York (*Journal A. M. A.,* April 28, 1923), under five main subjects: (1) teachers; (2) students; (3) the subject matter included in a medical course; (4) methods of teaching and of study, and (5) the chief aims in medical education and the present hindrances to their attainment. Clarke's closing words show that it is his belief that the prime essential is the teacher. He says, "Only the best instructors should be chosen, because on them depends the selection of students and to a large degree their development and education. The surest way to have many good instructors available is continuously to develop them from those possessing the greatest apparent potentialities. Teachers who do not continuously prove of value should not be allowed to remain in a school. The method maintained should aim for the selection and maintenance of good teachers and laboratory workers, for under them any method of education is successful.

DISPOSITION OF URETERS IN CERTAIN ABNORMAL CONDITIONS OF URINARY BLADDER

William E. Lower, Cleveland (*Journal A. M. A.,* April 28, 1923), summarizes his paper as follows: "Transplantation of the ureters is an operation urgently indicated in the presence of certain malformations of the bladder, either congenital or acquired. The choice of site should be one to which the transplantation can be made with the minimum of immediate operative mortality and a maximum of ultimate comfort to the patient. From my own series, I believe that the submucous implantation of the ureters in the sigmoid or rectum by the technic first proposed by Coffey most nearly fulfills the foregoing requirements. In any case, agreement regarding the most efficient method of treating the class of patients on whom this operation is required is needed in order that the technic may be standardized. The basis of judgment for the final selection of such a standardized technic should be its ability to give to the patient the utmost possible diminution of his misery and the best possible economic status."

CLASSIFIED ADS.

Wanted: Physician, for practice in large fruit country, left vacant by two recent deaths. Prosperous people. No competition. Good schools and roads. Nothing to buy. Come prepared to work. Write to W. S. Adams, Gardners (Adams County), Penna.

For Sale.—Five-thousand-dollar country practice in central Pennsylvania. No competition. Nearest doctor eight miles. Address Dept. 515, Atlantic Medical Journal, 230 State St., Harrisburg, Pa.

THE ATLANTIC MEDICAL JOURNAL

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ORIGINAL ARTICLES

THE RENAISSANCE OF THE GENERAL PRACTITIONER*

SYDNEY R. MILLER, M.D.
BALTIMORE, MD.

1. INTRODUCTION:

The renaissance of the good general practitioner is a matter of vital importance both for the medical profession and the public at large. Though much discussed, the problem is far from a satisfactory solution, and, as one result, the profession is obliged to shoulder the blame for no small amount of public dissatisfaction and distrust, by no means devoid of substantial grounds. It would be impossible, in one paper, to discuss the various causes of and suggest ways for the improvement of those conditions which have brought about apparent deterioration in the general practice of medicine. Opinions differ: to the author's own way of thinking many of the defects and their remedy lie within the hands of the general practitioner himself. It is to him, therefore, that this message is directed —to sound some needed warnings, to banish certain misconceptions, but most of all to encourage and stimulate him and to rearouse a legitimate and enthusiastic opinion of his importance in the practice and advancement of the profession of medicine. For unless all physicians and the communities served by them have a clear vision of the present problems and future promises of medicine, and the ways by which they can be attained, the public will be more strongly and wrongly influenced by the shortcomings of present-day practice than by the wonderful achievements medicine has already won. Public enlightenment is essential to medical progress, and the good practitioner indispensable to each.

2. CERTAIN CONTEMPORARY TRENDS:

Contemporary medicine, particularly in the past ten or fifteen years, has been characterized by certain dominant trends, to some of which brief reference must be made.

(a) There has been an ever increasing degree of specialization and a coincident rise in the number and variety of specialists. Unfortunately many of these are incompetent either in terms of adequate specialistic training or a well rounded experience in clinical medicine. The domain of their activities is confined chiefly to the larger cities. The ranks of specialism are filled not merely by recent graduates but by ambitious or dissatisfied older practitioners. This explains in part the development of a most deplorable deficiency in adequate medical practice observed in many smaller rural and urban communities.

(b) Contemporary medicine has witnessed the elaboration of an enormous number of laboratory tests and the introduction and prompt commercial exploitations of many instruments of so-called diagnostic precision.

(c) Certain noteworthy and perhaps unavoidable changes have occurred in medical education. The much discussed and honestly questioned "full-time" régime has attracted much attention. Medical students of the present generation are trained, it is contended, in an ultra-scientific and specialistic atmosphere and are subjected to the risk of neglecting some of the subjects of more fundamental value in the practice of medicine. The glamor of the certain (?) laboratory diagnosis, the disastrous dabbling in pseudo-scientific research while medically adolescent, and a woeful tendency to regard patients as objects of scientific curiosity, to the neglect of the broader human problem each one presents, spell disaster to the rising generation of physicians. They go out unequipped to meet inevitable public wants —trained too often by men whose scientific ardor has not been tempered both by adversity and a broad experience with suffering humanity.

(d) As a direct result of specialism, contemporary medicine has seen the development of the so-called group of community practice.

Each one of these and many other unmentioned trends reflect studious and laudable endeavors to reduce medicine to the realms of a pure science—which it never can be—to make diagnosis simpler and more certain, and hence the treatment of disease or the restoration of diseased function more precise. No one could intelligently argue against the desirability of such ideals nor sanely contest the value of advances already made.

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*Read by invitation before the Section on Medicine of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

3. Reactionary Influences Upon the General Practitioner:

An unbiased analysis of this brilliant era in our profession clearly reveals certain evil results of these modern medical tendencies. Some have seemed to exert a detrimental influence particularly upon the general practitioner and his work, and therefore, upon the community served by him. One might mention a few.

(a) The pursuit of knowledge has tended to assume ever more and more an academic nature with far too little reference to the problems confronting the doctor who *practices* medicine. It has been unfortunate for clinical medicine that the laboratory worker has been allowed to dominate the field of research. The doctrine has apparently grown which postulates medical advancement more upon cloistered study than broad clinical observation. Money is lavishly poured out for research, and fortunes expended upon laboratories, their maintenance and the salaries of able men appointed to run them. Rising generations of students, tutored under such influences, absorb the belief that through such research alone can medicine advance. The able general practitioner has little if any say in the shaping of medical education or research. Without grants to help him use *his* opportunities, he is forced into an insignificant niche—unhappily aware of the modern demise of the investigator engaged in medical practice.

(b) The ranks of specialism have been overcrowded by those who too often have succumbed to a serious contemporary materialistic lure. Practitioners, as a rule working much harder, have been forced to grapple with a dissatisfaction bred by an unfair disparity between their incomes, comforts and opportunities for recreation, as contrasted with consultants, specialists and surgeons.

(c) Contemporary medicine has not yet been tempered with a proper degree of humility, and professional credulity—a benign form of dishonesty—has become a disease of very serious public menace. Specialists expound views, describe methods and claim cures based far too much on impressions rather than facts. Fads—short cuts to diagnosis and extravagant methods of therapy—are widely exploited. One result has been a modern tendency for patients to seek specialists primarily, or undergo, without their physician's advice or knowledge, a group-diagnostic study. Many such, studied either too impersonally or with too narrow a perspective, dangers inherent in group practice or specialism, furnish ready recruits to the ever present opponents of medicine—the cults. These, either from a semi-religious fanaticism or from motives of pure financial gain, rob both the physician and the community of its health. Practitioners, silent witnesses of such events, have too often succumbed to feelings akin to disdain, even for merited specialistic study, and have rebelled against the utilization of methods apparently, though not actually, ruinous to their private practice.

(d) Finally, the average general practitioner has become unavoidably confused by the contemporary deluge of diagnostic laboratory procedures. Too often he has been misled into an excessive reliance upon them, to the neglect of other studies far more important. But what is far worse—many a practitioner has come to feel that he is behind the times, unless surrounded by elaborate and expensive apparatus, with the use of which he is unfamiliar. He must therefore employ a technician, upon whose results he is forced to rely dogmatically, or else entrust his problems to some centralized laboratory. Since such a state of affairs has been impossible for many practitioners, not a few have developed disastrous feelings of personal inadequacy and an almost psychasthenic tendency to undervalue their usefulness to their community and profession. Underpaid, overworked, discouraged, out of the scientific glamour of the times, hopeless victims of modern scientific progressiveness, bereft thereby of a chance to contribute to medical advancement and thus doomed to the ruinous monotony of piece-maker, they have become the ready victims of the envy or dissatisfaction which robs them of their normal vocational enthusiasm. Such sentiments should not and must not be allowed to exist, even in the minds of a minority. Moreover, such feelings are certainly *not* shared by the intelligent public at large, which is coming more and more to realize that the good general practitioner always will be the backbone of the medical profession. He need but make his standards of practice higher as medicine advances and an honestly informed public becomes more discriminating.

4. Analysis of the Laboratory Problem and Specialism:

Granting, for argument, that excessive or improper reliance upon laboratory procedures or specialistic study have been potent factors in causing *some* of the practitioner's contemporary difficulties, a brief analysis of them seems warranted.

There are four main varieties of laboratory methods or tests.

(a) Those of pure research.

(b) Those of suspected but unproved value. These have a legitimate field; their number will always be large and their diligent study is to be encouraged. From the sum total, a few will stand as the result of accredited merit. Their clinical application should be studiously restricted to hospitals and teaching institutions until their relative value, inherent sources of error, or utter uselessness have been decisively demonstrated.

With these two groups the active practitioner *need* not concern himself whatsoever.

(c) Those of established value but of a complexity which puts their application beyond the reach of the average practitioner, either by reason of equipment required, the technic or time involved, or the infrequency of their need. Included in this group one might mention basal metabolism, the Wassermann reaction, clinical bacteriology, blood chemistry, and electrocardiographic studies. Fortunately, the utilization of tests in this group is *necessary* in but a relatively limited number of cases. To deal intelligently with them but three things are necessary.

(1) An understanding of the *physiological basis* for the tests, which in turn implies a knowledge of when they are clinically indicated.

(2) An unwillingness to interpret the results except in correlation with all the clinical data critically judged by sound common sense. The practitioner unable thus to appraise laboratory findings deprives his patients of expected benefits.

(3) First hand information as to the methods used and care exercised in the laboratory in which the tests are made.

(d) Finally, those tests of long tried and proved worth, simple, requiring a minimum amount of laboratory apparatus and a small expenditure of time, each capable of yielding diagnostic information which every practitioner should be able to interpret correctly. In this group are included the routine studies of the blood, urine, feces, gastric contents, spinal fluid and sputum. Twelve years in the teaching and use of clinical laboratory methods corroborates Peabody's recent statement that "in spite of the great contributions which the laboratory has made to clinical medicine, there has been surprisingly little change in the character or number of the technical methods that are essential to good practice. In spite of the extraordinary influence that the laboratory has had on the development of medical science, there is as yet no cause for the physician to feel that he cannot keep up with the requirements of the best modern methods." The practitioner who cannot or does not judiciously utilize these laboratory procedures is deficient in his clinical practice and doomed to fall by the wayside.

Essentially the same principles should govern the general practitioner's utilization of the various specialties. It goes without saying that no one can be equally proficient in all of the domains now ruled over by specialists. There is but little excuse, however, for failure or inability to recognize the commoner significant changes in the eye grounds, to transilluminate an antrum, detect rectal or pelvic abnormalities, note the simpler evidences of neurological disease or suspicious periapical dental infection. It is not necessary routinely to refer a patient to a number of specialists simply because pathology is *suspected*. Too often it involves a wholly unnecessary financial outlay—particularly when so many negative or normal reports bear rather damaging testimony to the fact that simple examinations have been neglected or thought enough has not been spent to anticipate the futility of specialistic examinations. There is, of course, much to be said in favor of the 100% complete diagnostic study. It is, however, not attainable or necessary in the vast majority of cases. Billings has recently made the assertion that 70% of all cases can be correctly diagnosed by the intelligent use of our special senses, aided only by recourse to simple and universally available laboratory procedures.

5. The Fundamental Requirements for Good Practice:

If the statements just made are true, it follows that the general practitioner either possesses or can readily avail himself, if he will, of the same diagnostic measures as does the so-called consultant. The latter is his superior, if at all, only by reason of his greater facility and skill, acquired through wide clinical experience, in utilizing the aids to diagnosis which are the common possession of us all. Over and beyond the rational use of these, there are but three things fundamentally necessary for good medical practice. They are:

(a) The daily *exercise* of our intellects. To but few is it given to be brilliant. Presumably most of us start with about the same degree of intellectual capacity. Now that particular level to which an individual rises in terms of intellectual development depends upon the degree and consistency with which he exercises his "mental muscles." It is well known that any muscle in the body can be trained into a state of great power and efficiency by suitably protracted use. The power of observation, the process of reasoning, the instincts of curiosity and wonder, keenness in special sense perception, and a whole host of emotions are but so many intellectual muscles. They develop and expand by use; they wither and become atrophied through disuse. The practitioner has just as good or perhaps even a better chance to strengthen these muscles than any consultant or specialist, for the simple reason that he is called upon to use them perhaps more constantly, and certainly under a wider variety of conditions. Puzzling cases, referred to consultants too often turn out to be simple problems, unsolved, it would seem, through mental inertia.

(b) Mental muscular development can only be attained through *industry*. This does not begin and end with the conscientious performance of the daily task. For those in the medical profession it means relentless study inspired by a perennial insistent demand for the solution of perplexities.

(c) Last, but by no means least, is *honesty,* not merely in our dealings but in our thinking. Too few of us take the pains to study the origin of our cherished convictions. We are incredibly heedless in the formation of beliefs and become filled with an illicit passion for them when anyone proposes to rob us of their companionship. The world to-day needs sadly more of the intellectual freedom of the Greeks, the "self-detachment and self-abnegating vigor of criticism" so strikingly illustrated in the honest "know-nothingism" of Socrates.

6. THE PRACTITIONER'S OPPORTUNITIES TO ADVANCE MEDICINE:

Employing simple methods, governed by the principles just enumerated, the general practitioner can become both a better clinician and an active contributer to medical advancement. But a few of his opportunities can be alluded to here.

A. CLINICAL OPPORTUNITIES:

(1) *The Early Symptoms of Disease:* Every physician should read Sir James Mackenzie's book, "The Future of Medicine," as well as the first volume of work conducted at the St. Andrews Institute for Clinical Research, founded and directed by the same author. Mackenzie believes that disease manifests itself chiefly through the symptoms it produces, and therefore it is of fundamental importance to understand their nature and significance. Such knowledge is urgently needed in the early stages of disease when the symptoms are mainly vague feelings of ill health, noted before the agents of disease have produced functional damage or physical signs. It is probably true that some of the most instructive phenomena of disease occur when no available method can detect structural change or functional perversion. They reveal themselves first by subjective sensations experienced by the patient. Mackenzie believes these can be usefully classified, according to the mechanism of their production, into structural, functional and reflex groups. He makes the astounding statement that there is not a single sensation which man is capable of experiencing that has been thoroughly investigated. Moreover, the study of the effect which the cause of a symptom has upon a patient's life cannot fail to throw much needed light upon the question of prognosis—literally "the foundation of the intelligent practice of medicine." It is not only conceivable but wholly probable that the symptoms of the early stages of chronic disease, with which our hospitals are filled and for the study of which many of our modern diagnostic procedures have been developed, are wholly different from what we have been led to suppose. Such defects in our knowledge hamper medicine in every way. "It seems manifest that if symptoms are ever to be properly valued, it can be done only by those who have the opportunity to watch the individual through long periods of time, who see the disease at its earliest stage, or even before its inception and who can observe its progress through all the vicissitude of life." This opportunity is primarily the practitioner's.

(2) *The Value of Therapeutic Procedures:* No one has such a chance for practical and utilitarian research as has the practitioner, in directing the lines of honest and efficient therapy. Systematic observation in the use of and results secured by drugs used according to the practical classification recently suggested by Barker, will advance medicine materially and spare the public financially. Bear in mind that of the thousands of concoctions which have been swallowed by suffering humanity, but few have stood the test of time and experience. Therapeutic fads are far too prone to sweep like epidemics through our profession. Both physicians and the public are constantly exploited with drugs and nostrums galore, which are too often accepted as all right simply because they bear the name of some widely known concern. It is a harrowing crime to witness the ease with which many doctors prescribe the fallacious glandular compounds bred of the modern endocrine fetish. We are guilty of complicity against the welfare of mankind when we dispense preparations of questionable merit or employ those of accepted worth ignorantly. From time to time there are turned over to the general profession drugs,

reputed to possess particular merits, suggested as the result of careful research studies. It is the practitioner who can finally affirm or refute the usefulness of such compounds. It is practical research to prove or disprove the claims advanced in behalf of benzyl benzoate, for example. It is likewise fraudulent to dispense bacillary tablets to prevent premature senesence or intestinal putrefaction, in the face of such work as that of Bass, Rettger and Cheplin. As a matter of fact, the largest part of the resources of modern medicine in the treatment of the sick, lies outside of the pharmacopeia. Daily remembrance of Benjamin Franklin's shrewd remark, that "he is the best doctor who knows the worthlessness of the most medicines" is the keynote to the practitioner's opportunity to advance therapeutics.

(3) *The Personality Factor in Disease:* Only recently has the medical profession commenced systematically to use psychology in its relation to human behavior under all possible conditions of health and disease. We now recognize that the human mind is the product of the moulding influence of social environment and the operations of certain primary tendencies commonly spoken of as instincts. Environmental maladjustments, certain instinctive hypertrophies, faulty training, impressionistic insults and popularized obsessions may all seek expression through the physical equivalent—somatic symptoms—and produce real or apparent incapacity. It is a fact that physicians well trained in the investigation of special organs or functions take too little note of the emotional and mental reactions marking the action of the human body as a unit. Until the study of human behavior becomes more animated and consistent, a lack of *logical* motive in the work of many physicians is likely to continue. This neglect is one result of the contemporary drive to make medicine a pure science. The pure theorist seems unable to understand that normal regulation of bodily activities is in great measure due to proper mental and emotional adaptations. Disregard of these facts is one explanation for much ill timed surgery; and to it can be attributed the frequent desertion of medicine by patients, and their subsequent misalliance with some cult or other. If we are ever to understand man, his conduct and reasoning, and if we aspire to learn to guide his life and his relations with his fellows, we must cease our traditional and habitual disregard of the mental side of patients. Who has such an opportunity to *know* his patients as the general practitioner? The trained psychiatrist can play but a relatively small part in this personality-factor problem. The point of attack is the home—and during the early years of life—and no one is so truly the logical director as the beloved family physician. The amount of good that can be done by psychotherapy is incredible. Through it, the practitioner can advance medicine tremendously. No one, so well as he, can undermine and uproot some of the grotesque and nauseating psychologic practices of to-day—best exemplified by the full time devotees to the morbid and erotic teachings of Freud.

In the field of personal and community hygiene, the practitioner can contribute his share to preventive medicine. He can aid much in the collection of data needed for the establishment of normal standards—about which we know but little. The progressive practitioner has an enormous field for practical clinical research in stabilizing the worth of many a diagnostic procedure and thereby exerting a dampening influence on the extravagant use of many a "short cut" method. At any and all times there is the chance to study intensively some disease or syndrome of particular personal interest, etiologic elusiveness or therapeutic promise. All that is necessary is sustained effort along some definite line.

B. SOCIAL OPPORTUNITIES:

Just a word as to the social opportunities for advancing medicine. Every doctor should read Barker's essay on "The Wider Influence of the Physician," therein to see even in a reduced perspective *some* of the chances he has for adding to the happiness of the world, thereby contributing to medical progress. Among other things he has many a chance to diffuse useful knowledge, and thus to counteract that which is false or misleading. Take as one example, the ever growing public menace of quacks and pseudo-philosophic cults. They exist as the result of widely believed traditions, and flourish because of unbelievable and amazing popular and professional credulity apparently uninfluenced by education.

Years ago in writing about "Homeopathy and Kindred Delusions," Oliver Wendall Holmes gave a clear analysis of the factors responsible for the existence of cults, and called attention particularly to three:

(a) How easily abundant facts can be collected to prove anything whatsoever.

(b) How insufficient exalted wisdom, immaculate honesty, and vast general acquirements are to prevent an individual from having the most primitive ideas upon subjects he knows nothing about.

(c) The boundless credulity and excitability of mankind upon the subjects connected with medicine.

"The people who take patent medicine, who employ quacks, who resort to Christian Science healers, who seek guidance through spiritualistic mediums or the Ouija board, who entrust their bodies to the manipulations of chiropractors, who consult medical sectarians, or who buy one or another of the well advertised psychologic gold bricks, do so because they believe that their wants will thus be better gratified or perhaps at less expense, than by employing the services of a regular practitioner. This belief is engendered mainly by artful suggestions but it depends in part on the failure of the medical profession adequately to gratify the worthy wants of patients, in part upon the failure of the public to realize that some of their wants are unworthy and that others are beyond the powers of any human being to satisfy."

The situation was well expressed by a certain Dr. Pitt of England, who wrote in 1703, "The profession of physic has been openly assaulted or secretly undermined by all of the quacks and ignorant or unlicensed practitioners, but it has suffered much more from the impudence, ignorance, or imprudence of many physicians." There is little ground for us to storm and give vent to indignant rage because of inroads into our practice by the faith healer and such an arch-fiend as the contemporary Abrams. We are forced to bear the burden of professional neglect along these lines whether we want to or not. We must cease thinking that the license to practice is a form of professional protection; it is not. It is an earnest of protection to the public. The public, however, must be educated not to expect a sufficient supply of competent practitioners until it wants them enough to offer the incentives and rewards which will attract honest, fearless men into the medical career; such a want will not be expressed until physicians, acting as instructors and counsellors regarding the nature of disease, truthfully admit their own unavoidable inefficiencies and dispassionately teach the limitation of illfounded dogmas.

The physician can exert a powerful influence in shaping the economic conditions of his state and country. He can advance the standing of his profession by an energetic interest in the problems of general education, and his voice should be heard in the shaping especially of medical curricula, through the agency of influential medical alumni associations. He can do a great deal to insure that the human being born, should be well-born, and with knowledge available and ever increasing, he can help to arrange the lives of people in such manner as will favor right thought, right feeling and right conduct.

CONCLUSIONS

In a fragmentary way an attempt has been made to point out some of the dangers which confront the general practice of medicine, as well as relatively simple ways and principles by which these dangers can in part be counteracted. It would be absurd to infer that the author in any way minimizes the importance of research or the value of modern laboratory and specialistic types of study. It is clearly recognized that specialism must always remain. Public opinion, however, seems to point to a dissatisfaction in current medical practice, and this in turn has been reflected upon the number and morale of general practitioners throughout the country. There is no reason whatsoever why this should continue. The general practice of medicine offers countless opportunities, not merely for making a living, but for providing the daily stimulus essential for the conduct of any progressive profession. From the direction which the newer and more scientific developments in medicine are taking, there is grave danger that the increased emphasis upon this important phase of the education of the doctor may cause the humanitarian and altruistic aspects of the subject to be neglected. After all, internal medicine is medicine itself—to which all specialties, surgery included, should be judiciously subservient. The dominant thought in writing this paper has been the conviction that successive generations of sanely trained internists will rise up to restore public confidence in medical practice and place both the science and art of medicine where they belong. "He who is in medicine both to advance our knowledge and to alleviate suffering, remains as always, the ideal physician."

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DISCUSSION

Dr. Howard G. Schleiter (Pittsburgh): I feel there is nothing that I can add to the things Dr. Miller has said in such a masterly way and in a style that is as delightful to hear as it is rare. And I shall only emphasize one thing—that all of us are endowed with the same five senses; after that, it is up to each man to develop, within the limits of his capabilities, his judgment. And based on that judgment and his knowledge, should come a proper degree of confidence, always tempered with humility, as Dr. Miller has said.

I was particularly glad to hear Dr. Miller speak as he did of laboratory procedures. It is essential to realize that a laboratory test should never furnish a diagnosis. It may be the determining factor in a diagnosis, but only where considered in conjunction with the history and physical findings. It is, therefore, incumbent on the practitioner to realize the value and limitations of a given test, and also to have such tests done by individuals known to be responsible and reliable.

The general practitioner is in a position to know the patient well; his habits, his surroundings and his idiosyncrasies. The consultant sees the patient only a few minutes. He has a chance to observe only one phase and he cannot know the patient as his own physician does.

I think I have said enough, and I want to express my gratification at having heard Dr. Miller.

THE CLINICAL MANIFESTATIONS OF PRIMARY CANCER OF LUNG*

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During the year 1921 four cases of primary cancer of the lung were observed on the medical service of the Mercy Hospital. All came to autopsy. In one instance the true nature of the pulmonary condition was not recognized at the bedside but in the others the clinical diagnosis was confirmed. It is only fair to add that in the cases where the correct clinical interpretation of the lesion was made, considerable detailed study was essential. The object, therefore, in presenting this small group is to call attention to the clinical manifestations as indicated in our material. However, it might be advantageous to touch briefly upon some of the cardinal points pertaining to the pathogenesis and the occurrence of this neoplastic process.

Ewing states that one per cent of the autopsies of cases dying from malignant disease show a primary cancer of lung. The percentage is much smaller if reckoned on the basis of the total autopsy number, as the figures given by Lord (105 primary cancers of lung in 46,169 postmortem examinations, or about 0.3 per cent) would indicate. Moise, who last year reported five cases, states that it is possible that the recent influenza epidemic may have had some part to play in the apparent increase in the number of cases of primary cancer of lung. During the past year we have seen four times as many cases as we had observed in the previous eleven years. It may be, therefore, that the statistics on primary cancer of lung at the present time are somewhat different from those of pre-epidemic days. Moise found 5 cases in 375 autopsies, or 1.38 per cent. We have had 4 in 231 postmortems, or 1.7 per cent. Prior to the epidemic our percentage was about the same figure as given above by Lord; but as we have not observed a case for a period of a year it may be that the disease is returning to its normal incidence, in which case, we would be justified in referring to primary cancer of the lung as a rare disease.

Cancer of the lung occurs almost three times as often in the male as in the female. Three of our cases were males. Reports show that the largest number are seen between the ages of 40 and 70, which is in keeping with the general rule for cancer. Three of our group were between 50 and 60. The other, the female, was 42.

As in cancer elsewhere the factor of chronic irritation from various cases has been advanced as having a bearing or an etiological relationship to the subsequent neoplastic formation. Cobalt miners in the Schneeberg region of Saxony are prone to develop cancer of lung. Pneumoconiosis is suggested as being responsible. Anthracosis must have little or no pathological relationship to cancer of lung. Pulmonary tuberculosis is at times an associated disease, as cancer has been known to develop in an old tuberculous cavity. A few years ago Haythorn showed very clearly that chronic infection in the bronchi and bronchioles, at times led to destruction of the basement membrane, with a subsequent change in the lining epithelium from the normal columnar cell to a squamous cell. This change, termed metaplasia, undoubtedly comes under the group of conditions which are referred to as a precancerous state. It is our belief that chronic infection of the bronchioles with metaplastic changes of the lining epithelium bears a closer relationship to the squamous cell cancers of the lung than does tuberculosis. In this connection the case reported by Henrici is important, for he was able to demonstrate in the microscopic section both a squamous cell cancer of lung and a typical metaplastic change to a squamous epithelium in the broncial lining. It is, furthermore, interesting to note, as Moise points out, that very destructive lesions of the bronchial walls were produced by epidemic influenza and that in organization much hyperplastic epithelial overgrowth, at times very difficult to differentiate from neoplastic change, was encountered. Moise suggests that possibly the reason for the post-epidemic increase of primary cancer of lung lies in this fact. Winternitz and his coworkers were able experimentally to produce changes in the bronchi and bronchioles, of a character identical with those of the epidemic, by the insufflation of hydrochloric acid. Irritation of a degree capable of destroying the basement membrane of the lining cells of the bronchi led eventually to a regeneration which, at times, was so hyperplastic as to assume features similar to new growth. We must not, however, forget that chronic irritative bronchial conditions are not by any means rare; in fact, they are quite the opposite, but yet under normal conditions this tumor formation is a very rare finding. One wonders if cancer of the lung has been see to any unusual extent in those individuals who were severely gassed during the war. It seems not unlikely that the irritative or destructive agent in the bronchial lining must be of a certain intensity. As Haythorn observed, it must destroy the basement membrane, in order to call forth abnormal cellular responses which, in certain instances, may even go so far as to enter the realm of neoplastic growth. In only one of our cases did we find evidence of much prior infection. This case showed a chronic tuberculosis, generalized blastomycosis with marked pulmonary involvement, and syphilis, the latter being proved by history, serology and specific aortitis. The presence of three granulomatous infections in the chest of one individual in addition to a neoplasm is a rather bizarre combination.

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Cancer of the lung arises from the lining epithelium of the bronchi or bronchioles, the alveolar epithelium, or very rarely from the mucous glands which surround the larger bronchi. The epithelium of the larger bronchi near a bifurcation is the common source, and the type cell is often squamous in character, at times producing very typical keratinization, as seen in skin cancers. This characteristic feature, however, cannot always be made out, although other minor details are usually demonstrable so as to indicate the squamous nature of the tumor cells. Some reports show that columnar cells, having the function of secreting mucus and forming gland-like structures, tend to predominate. It is on this evidence that an origin from the mucous glands was considered to be proved. Moise takes issue with this idea and points out that the lining columnar cells of the bronchi have also this function of secreting mucus. He doubts that the mucous glands are responsible for many primary cancers in the lung. We agree with him. Probably the commonest type cell of all is an undifferentiated polyhedral one. The origin of this cell is most likely from the lower layer of the bronchial epithelium. It seems very improbable that the alveolar epithelium plays an active part in the production of this growth. There are but few authentic cases of this latter type reported. All types of cells may be found in different parts of the same tumor. After the growth has reached an advanced stage of development it is almost impossible to say exactly from what point or from what cell it arose; but it is more than likely that the lining cells of the bronchi are in most cases responsible. The different microscopical features depend upon the varying degrees in differentiation. Squamous cell tumors, we believe, indicate previous metaplasia. Two of our group were of this type; the others were of the polyhedral character.

The tumor may be seen in the lung in various forms—a localized growth with a tendency to be somewhat definitely outlined, a massive lobar involvement, a diffusely scattered large miliary form and the most frequent type, the spreading, somewhat branching structure, extending from the bronchi near the hilus of the lung. These divisions are not absolute, as it is not uncommon to find two or more forms represented in one case. The extension of the malignant growth to the pleura, a point of considerable clinical importance, is possible in any type of growth. The tumor metastasizes to the regional lymphnodes of the thorax with almost certain regularity, while the spread of the tumor cells elsewhere in the body is not an outstanding feature in our cases, but in many of the reports in the literature general metastasis is not uncommon.

Hamman suggests that the clinical manifestations of primary cancer of the lung simulate one of three processes, namely, chronic lung infections, local tumor and pleurisy with effusion. He states that early in the course of the disease the diagnosis is often difficult to make, but later on it may become very clear, while at times the neoplastic process is only discovered at autopsy. This has also been my impression of the condition from the limited number of cases available for observation. The diagnosis is made more by exclusion than by pathognomonic signs. One can readily realize that the symptoms and signs of cancer of the lung may vary considerably, depending upon the location of the tumor. Some of the clinical features which have been described in studies of the disease have been wanting in our series.

Pain is a very important symptom and was present in all of our cases. The type of pain varied from a dull aching to an acute, agonizing, stabbing sensation, causing the patient to cry out. When the pain was dull it was more or less constant, while in the two patients with the acute type of pain the attack assumed a periodic character. The seat of the pain in all cases seemed to lie deep in the chest, but in the acute types it was also referred at times to the epigastrium and to the left arm. These attacks became more frequent as the disease progressed and appeared to be more intense, as the narcotic used had to be given in much larger doses to allay the suffering. The pain occurred more often at night than during the day. Pain may be independent of the pleura, as in our most acute example the pleura, at autopsy, was free from tumor involvement.

Dyspnea was evident in all four cases on very slight exertion, as in sitting up in bed or even, at times, in changing the position to only a slight degree. This symptom progressed as the illness advanced. While the patient was resting the dyspnea was not noticeable. Dyspnea and acute pain often were associated. Cyanosis was present in one case but absent in the others.

In one patient coughing was practically absent, but in the others it was evident, although somewhat variable in nature. We would not say that there is any typical cough, but we would call attention to a dry, hacking, spasmodic cough which was usually associated with an attack of dyspnea and considerable pain. This type of coughing usually continued for two or three minutes, and it was following these attacks that bloody sputum was often observed. More or less constant but not excessive coughing, with a very moderate amount of mucoid sputum, was noted in the two remaining cases.

One may derive much information from the sputum. Blood was present in the sputum in all of our cases at some time during their course. In one, the currant jelly sputum was frequently seen, but in the others it was usually the bright red tinged sputum, often obtained after a paroxysm of coughing. A few years ago I saw a patient where a fresh bloody sputum, almost pure blood, was the outstanding feature. In this case a piece of squamous cell cancer about the size of a split pea was recovered from the sputum. This should always be kept in mind where neoplasm of lung is suspected, but great care should be exercised in the diagnosis of tissue of this character. Repeated examinations of the sputum for tubercle bacilli, and a thorough searching of unstained specimens for fungus growths is an essential part of the examination. The finding of tubercle bacilli as a rule will make the diagnosis of cancer of lung, at least clinically, almost untenable, even with the knowledge that these two conditions are sometimes found in the same case. One of our patients illustrated this point. It is the negative findings (tubercle bacilli and fungi) in the sputum that are of most value in attempting to make a diagnosis of cancer.

The physical signs are not in themselves distinctive of neoplasm in the majority of cases. When the pleural involvement responds by an outpouring of fluid, the signs of effusion naturally are present. This may be so evident that little or no information may be obtained from the lung lying beneath the fluid collection. The fluid in these cases may be blood-tinged but not always so. The rapid reaccumulation of fluid after removal is the rule rather than the exception. I have recently seen over two litres of clear fluid removed on each of twelve different occasions in the course of two months, in a case of neoplasm of the lung, probably lymphosarcoma of mediastinum and lung. Bloody fluid suggests neoplasm but may also be characteristic of tuberculosis. One of our cases had a most extensive pleural involvement by the new growth but there was no fluid present in the cavity. Pleural effusion was seen in only one of our group, and in this case the physical signs were those of an effusion.

Dullness on percussion, usually unilateral over the lower lobe, diminished vesicular breathing and voice sounds and a moderate number of râles appear to be most constant. These signs are not unlike the delayed resolving lungs of the post-influenzal days, or even the chronic bronchopneumonias of the last few years, although in some instances this comparison is not good, as non-resolution is often accompanied by increased breathing and voice sounds and is not infrequently bilateral. The presence of basic and the absence of apical signs is the rule, except when the growth lies in the upper lobe. The finding of blowing breathing over these localized tumor areas has been noted, but in none of our group was this observed. The growths at the hilus of the lung may be very obscure in the early stages, prior to the extension of the tumor tissue into the parenchyma of the lung. One of our cases was of this type. There were no abnormal physical signs to be made out; the patient, however, had deep mediastinal pain and difficulty in swallowing due to pressure on the esophagus. Later, there was abundant unilateral evidence in the lung of pathological change as the tissue was invaded by the new growth.

It is my belief that the earliest recognition of a tumor having its origin in the lining of the accessible bronchi, could be made by bronchoscopic examination. There is undoubtedly a stage in the development of these tumors when this would be the only method of diagnosis by physical signs. Weller has referred to this previously in a pathological study on cancer of lung, and it is my impression that Chevalier Jackson has demonstrated this fact clinically. We are loth to admit that none of our cases were examined by the bronchoscopic method. In expert hands it is possibly the earliest and most accurate method of arriving at a diagnosis.

The roentgen ray findings have been to me a disappointment. In one of our cases the diagnosis of cancer of the lung was made many weeks before the roentgen ray department would volunteer a similar opinion, even with the knowledge that neoplasm was considered. In two cases the diagnosis by roentgen ray was "no neoplastic growth." One of these was recognized clinically, while the other was discovered at the autopsy table. In the case which presented pleural effusion and which was diagnosed clinically as cancer, no neoplastic growth could be made out by roentgen ray on account of the dense shadow produced by the fluid and thickened pleura. It is, therefore, my impression that in the early diagnosis of cancer of the lung the roentgen ray is not as valuable as other methods. This does not, however, apply to mediastinal growths, nor does it in any way indicate that complete roentgen ray work on these cases should not be done.

Three of our cases were febrile. There was considerable variation in the fever, ranging from a high intermittent type to a slight daily rise. Occasionally, periods of a few days of normal temperature occurred, to be followed by a febrile course. Many of the cases collected by Weller showed no temperature reaction. However, more recent observers, as Hamman and Moise, regard the presence of temperature as being almost typical. Certainly our cases were of this group. There was a moderate leucocytosis in all of our patients and in one the count rose to a little over 20,000. Finally, progressive loss of weight and strength, beginning in the early stages of the disease, associated with visible signs of emaciation towards the latter part of the illness, completes the picture.

The duration of the illness is, of course, difficult to estimate accurately, in so far as it is impossible to date the onset with any degree of certainty. Some of the reported cases collected by Weller entered the hospital in a moribund condition and died shortly after admission. The diagnosis of primary cancer in this type of patient is practically always made at the autopsy table. One of our group, the patient presenting the three different types of granuloma, died a few days after admission. Cancer was not even suspected. As far as we could learn from the man, he had been well and working two months previous to the time of his entrance into the hospital. In two cases, the duration appeared to be between five and six months, and in one almost eight months.

In an individual of middle age, with a normal heart and aorta, who has been losing weight and strength and who presents such symptoms and signs as pain in the chest, dyspnea, cough, fever, blood-tinged sputum, with local evidences of unilateral basic lung involvement, having no tubercle bacilli or fungus growth in the sputum, with syphilis eliminated as far as possible, suspect a neoplasm of the lung.

Mercy Hospital.

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DISCUSSION

Dr. George Morris Piersol (Philadelphia, Pa.): I think the value of a paper such as we have just heard, is that it again emphasizes the fact that there are chronic pulmonary conditions other than tuberculosis that we should bear in mind, notably primary neoplasms of the lung. The recognition of primary carcinoma of the lung depends upon knowing that such a condition may exist, more than upon anything else. It does seem, as the speaker has just said, that pulmonary carcinoma is more frequent than formerly. Whether this is due to the recent influenza epidemic, or is merely the result of improved diagnostic acumen, I do not know.

In 1913 Dr. Sailu and Dr. Toney found that in every thousand deaths 156 are due to primary carcinoma of the lung.

My feeling is that the condition is more common than we think, and is not recognized as often as it should be because those who have charge of patients with chronic pulmonary conditions do not bear in mind the possibility.

In the last three years, at the Philadelphia General Hospital, during the four summer months, each year we have had one case of primary carcinoma of the lung. Of these three cases two have gone to autopsy; the third case we still have under observation. One case was as old as fifty-eight; the youngest was thirty-eight. In every case the onset has been insidious and we have been impressed by signs and symptoms that correspond to those about which you have heard. In every instance pain was the first symptom. In one instance, when the pain was severe from the beginning, the patient became a morphine addict before he succumbed. The ribs as well as the vertebral column were eroded. Sooner or later a cough developed but not particularly significant in the early stages. Cyanosis was absent. Every one of these cases at the start, however, was suspected of being tuberculosis.

Their sputum was examined, in one case as often as twenty-five times, and always with negative results. It is important to keep this fact in mind: the cases seem to be tuberculosis, yet the sputum comes back negative repeatedly. They go to autopsy and you find that there really is no tuberculosis present at all. The negative sputum examinations, therefore, were significant.

As emphasized a little while ago, all the signs and symptoms should be looked upon as aids; none should be depended on entirely, but all should be heeded. In pulmonary carcinoma there may be carcinoma cells in the sputum. Both of the cases that went to autopsy had marked clubbing of the fingers.

So far as experience with x-ray is concerned, our experience has been more encouraging than that of the reader of the paper. In all cases we give credit to the x-ray for having sent back a report we ultimately found correct. In every case the skiagrapher reported a neoplasm of the lung, not of tuberculous origin. In our experience the x-ray has been exceedingly helpful, and I confess the original x-ray diagnosis of neoplasm in one of the cases was at first scoffed at. It is at least a very valuable adjunct and help. However, it is not always available, and the important thing to emphasize is to use our own senses and the things we have at hand for making this diagnosis.

The diagnosis can be made if we will bear in mind the fact that carcinoma of the lung is apt to exist, and not become obsessed by the idea that every patient must have tuberculosis.

Remember that most of the carcinomas of the lung begin not at the apices but at the root or at the bases. In the last two or three years we have emphasized the fact that given a lesion above the center of the chest and it is usually tuberculosis. But when the lesion lies below, at the bases, be very skeptical of its tuberculous nature. At least we should be on our guard when we find physical signs in the lung below the middle of the chest. In addition, then always make repeated examinations of the sputum.

Another diagnostic difficulty is the likelihood of calling these neoplastic lesions pleural effusions.

The paper we have just heard is extremely useful because it focuses attention on nontuberculous chronic pulmonary lesions.

Dr. Albert E. Roussel (Philadelphia, Pa.): Some years ago at the Howard Hospital we performed an autopsy on a case that came in at the last moment with primary carcinoma of the lung. But I want to call attention to the fact that secondary carcinoma of the lung is more frequent than we give it credit for. We have seen ten cases in the last five years, most of them in women, following carcinoma of the breast, and one case of sarcoma of the lungs in a girl of twenty years, occurring two years after removal of the leg for the same disease. In most cases pleural effusion is the main factor, and the effusion is apt to be bloody. The history of previous malignant disease aids the diagnosis.

I want to emphasize that secondary carcinoma of the lung is a comparatively frequent condition.

Dr. Irwin J. Moyer (Pittsburgh, Pa.): In regard to the difference in the physical signs—I examined a case in Pittsburgh in which I could not satisfy myself as to what was the trouble. There are other conditions which may have very much the same symptoms as tuberculosis or carcinoma. I finally diagnosed the case as a neoplasm, and it proved to be so. The condition was chronic, but the physical signs did not indicate tuberculosis.

Dr. Maclachlan (in closing): Unfortunately, I took up too much time on some of the interesting things in etiology. There are two points which I neglected to mention to which I now wish to refer. I believe that it has been shown by Chevalier Jackson that bronchoscopic examination may clear up the diagnosis in a case of this type. Strangely enough in the series of cases reported by Weller and by Moise they both recommended bronchoscopic examination, although these examinations were not done. I similarly, recommend it, although it was not done on any of my cases.

It is possible to find masses of tumor in the sputum, although great care should be taken in making a diagnosis from tissue of this type. I have seen one case of this character where the diagnosis was very easily made. Of course, it is merely guesswork to attempt to diagnose cancer by finding a few individual cells.

THE IMPORTANCE OF PHYSICAL FACTORS IN THE PROGNOSIS OF RENAL INFECTIONS*

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SOME CONSIDERATIONS IN THE PATHOGENESIS OF RENAL INFECTIONS

Pyelitis, or pyelonephritis, is the most common type of infection of the kidney, and it is with this variety that we are now concerned. Thus, at the outset we eliminate from detailed consideration that not inconsiderable group of acute suppurative lesions which are generally conceded to be the result of the renal implantation of blood-borne pyogenic bacteria. Attempts to segregate clinical varieties and pathological entities from the many and varied activities of infection in the upper urinary tract have met with considerable, but by no means complete, success.

Microörganisms in the blood stream may be delivered to the kidneys in pure or mixed cultures, but a primarily pure culture in the kidney may be augmented or entirely destroyed by the subsequent addition of other organisms. Cabot and Crabtree are strongly of the opinion that the lesions produced in the kidney by the cocci and pyogenic bacilli differ essentially from lesions produced by nonsuppurative organisms, such as the colon-typhoid group, the former causing cortical lesions, the latter giving rise chiefly to pyelitis and its sequelæ. If hard and fast rules regarding bacterial localization in the kidney could be drawn, the determination of the type of invading organism would be of the greatest prognostic significance, and upon this determination would depend the proper method of treatment. There are good reasons for believing that the pus producing cocci have a special affinity for the renal parenchyma, but there is equally good evidence to prove that this group of microörganisms is capable of producing disease in parts of the kidney other than the cortex. Infections localized in the cortical portions of the organ could scarcely be treated successfully by pelvic lavage.

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We meet with certain cases of coccal pyelitis which are difficult or impossible to cure by lavage, while others respond to local treatment equally as well as colon bacillus infections. The latter, which are generally supposed to be more or less limited to the pelvic mucosa and adjacent segments of the tubules and, therefore, suitable for local applications, may prove most rebellious to treatment, but of the two types, the colon bacillus infections are far more responsive to pelvic lavage.

Bumpus and Meisser regard the colon bacillus as a secondary invader, the initial infection, in their opinion, being streptococcic in type. A contrary view is expressed by Harrold, who has succeeded in isolating colon bacilli from the cervix uteri, and from the feces of patients with pyelitis, which corresponded in serologic and biologic tests to the bacilli recovered by catheter from the infected kidney. Additional support to the view that the colon bacillus is the primary invader is found in the observations of Kowitz, who found this organism in the blood of five children suffering with infectious diarrhea and soon thereafter, first albumin, then colon bacilli and finally pus in the urine. In the study of stained tissue sections from sixty cases of suppurative nephritis, Cabot and Crabtree were able to demonstrate the presence either of bacilli alone, or of a mixed infection in fifty per cent.

It would seem that there is a tendency to ascribe to the various bacteria a too circumscribed specificity in the production of inflammatory lesions of the kidney. Renal lesions produced by any given variety of microörganisms probably vary within the widest limits, and as a rule the factors determining these variations are difficult to demonstrate, either by clinical means or in the study of operative or postmortem specimens. It is likewise impossible, in most instances, to retrace in sequence the bacterial steps in the production of any advanced inflammatory lesion of the kidney. Figure No. 1 shows an enormous pyonephrosis removed from a girl of 14 years referred to us by Dr. Torrence Rugh of Philadelphia. This patient had, in addition to the genito-urinary infection, chronic tuberculosis of the spine, knees and the right elbow joint. While the major pathology in the kidney was a colon bacillus pyonephrosis, nevertheless tuberculosis was found microscopically in the thin shell of kidney parenchyma. In this instance the colon bacillus had caused destruction of the diseased kidney, transforming what would in all probability have been a massive caseo-cavernous tuberculous kidney into a pyonephrosis with no gross evidence of tuberculosis.

If we align ourselves with those who maintain that the pyogenic cocci have a predilection for the renal parenchyma, we must assign to the complex anatomy of these parts an important mechanical influence in prognosis.

Drugs in solution, when injected into the renal pelvis, are quickly diffused throughout the kidney substance, but it is questionable if drugs thus injected could have a sterilizing effect on bacteria resident in peripheral portions of the cortex. O'Conner has shown that within twenty minutes after the injection of mercurochrome into the pelvis of the dog's kidney, the drug has reached the glomeruli by passing directly up the lumen of the tubules, but that this diffusion is marked only at the poles of the organ. Metallic silver was found in the most distant collecting tubules after the injection of silver nitrate. The same author maintains that bacteria usually localize in the submucosa of the pelvis and pyramidal tips, and less frequently in the convoluted tubules and lymph vessels surrounding them. The anatomical effects of bacterial localization in the pelvic structures are usually evidenced in the pyelogram, involvement of the true pelvis being characterized by muscular atony and expressed in the pyelogram by varying degrees of pelvic dilatation, the involvement of the pyramidal tips and adjacent mucosa being shown by blurring or feathering of the minor calices. (Fig. No. 2.)

Marked dilatation of the true pelvis and decided changes in the minor calices, in the absence of mechanical obstructions in the ureter or lower urinary tract, are of evil prognostic significance, especially if associated with marked lowering of renal function. Dilatations of the true pelvis due to mechanical influences alone or in association with mild infections are usually recovered from with surprising rapidity after removal of the obstruction. This is especially true of the pyelitis of pregnancy in which the pelvic capacity may be greatly increased, but in which it becomes rapidly restored to the normal after delivery of the child and appropriate local treatment to the infected pelvis.

The problem of ascending renal infection remains unsolved, but it would seem to play a minor rôle in the incidence of pyelitis. Cabot and Crabtree admit the probability of its occurrence only under two conditions, namely, in the presence of ureteral obstruction or in the presence of an incompetent ureteral sphincter with back pressure. They quote the studies of Crabtree who obtained positive blood cultures for B. coli in forty per cent of thirty-two cases of pyelitis, and on the basis of this and other evidence conclude that the theory of ascending infection, as far as pyelonephritis is concerned, is "wholly mythical."

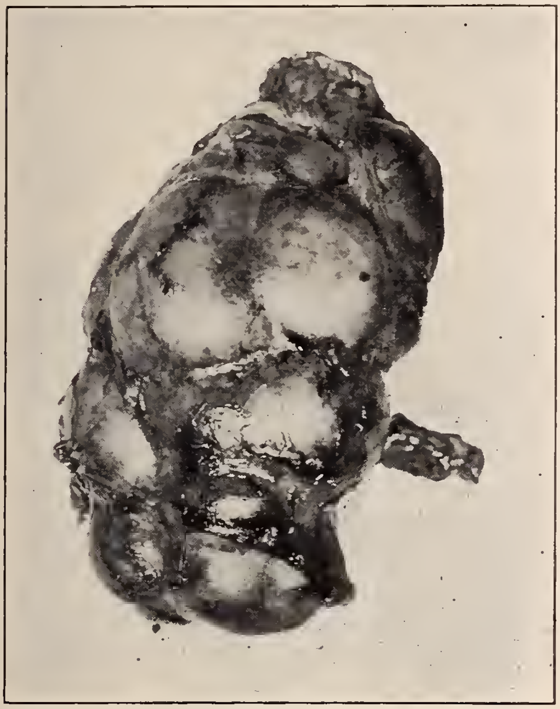


FIG. No. 1

Large Pyonephrosis. Areas of tuberculosis found in the small remaining portions of the parenchyma. The patient had Pott's disease and tuberculosis of both knee joints and the right elbow.

Infections primarily localized in the pelvic mucosa probably ascend the uriniferous tubules in many instances. A blood-borne infection may traverse the renal tubular system apparently without causing inflammation and become engrafted on the pelvic mucosa, which latter, being highly absorptive, becomes the source of repeated blood infections. It is unlikely that such absorption is a continuous process; that it occurs intermittently seems probable in view of the tendency of chronic pyelitis to acute exacerbations with associated systemic symptoms and bacillemia. Magoun has furnished us with convincing evidence that the infected pelvic mucosa may serve as a focus of repeated blood infections, and it is conceivable that in this manner, the renal parenchyma may eventually become involved in a case that was primarily an uncomplicated pyelitis.

The clinical histories of many patients with bilateral pyelitis indicate that the infections do not occur simultaneously. It is possible that one kidney may become infected with bacteria of foreign origin, and later become the source of infection to its fellow on the opposite side, by repeated reinfections of the blood stream. The lymphatic transmission of bacteria from one kidney to the other is merely a theoretical possibility; infection localized to one-half of a duplicated pelvis would seem to indicate that the lymphatic transmission of bacteria in the renal tissues is unlikely. (Fig. No. 3.)

THE PRODUCTION OF LESIONS IN THE NORMAL KIDNEY DURING THE ELIMINATION OF BACTERIA

The long continued excretion of bacteria and bacterial toxins may give rise to the development of isolated patches of interstitial nephritis; while chronic bilateral pyelonephritis according

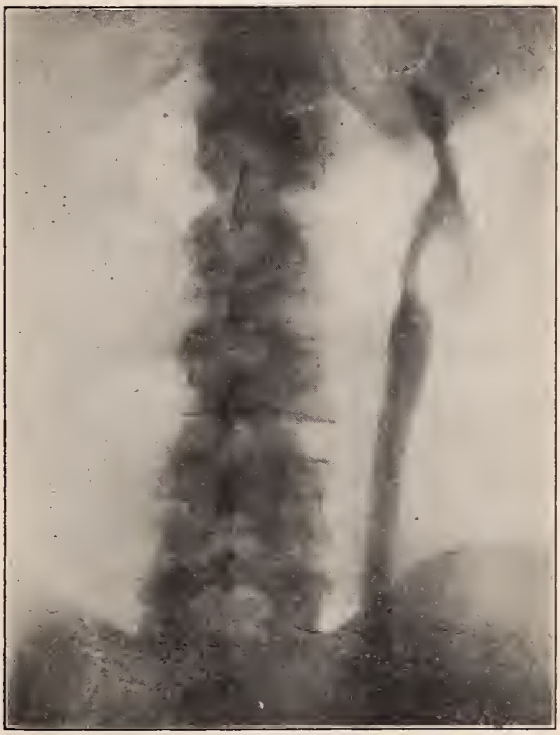


FIG. No. 2

Pyelogram of case of non-complicated pyelitis. Note the indefiniteness (feathering) in the outline of some of the minor calices. This, we believe, is due to inflammation of the pyramidal tips.

to Braasch, often leads to terminal renal insufficiency, and at death the kidneys are found to be "somewhat smaller than usual and characteristic pathologically of chronic interstitial nephritis, and to have many areas of round cell infiltration, and a slight degree of dilatation of the renal pelvis and ureter." Unilateral examples of a similar if not identical process, constitute a distinct clinical entity, namely unilateral atrophic pyelonephritis. (Fig. No. 4.)

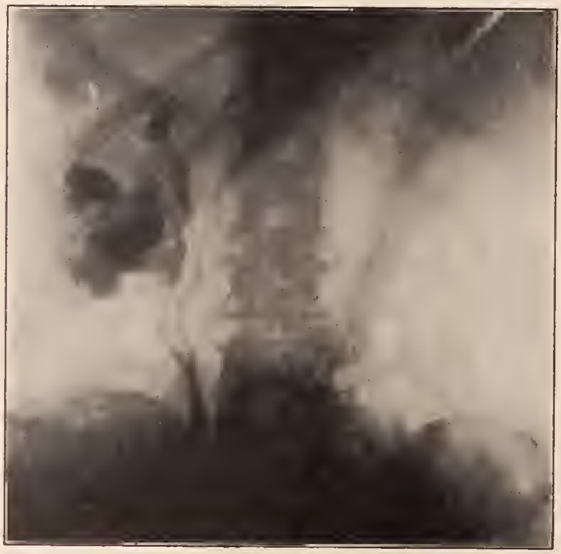


Fig. No. 3

Pyelogram of duplicated pelvis with pyonephrosis of the lower pelvis. The upper pelvis has entirely escaped infection.

So far as we can determine, the normal kidney is subject to infections in the entire absence of any anatomical or functional predisposition. The predetermining influence of bacterial toxemia on the kidney antedating the actual implantation of the bacteria is largely conjectural, but there are good clinical reasons for believing that toxic nephritis may antedate the bacterial nephritis or pyelitis. This was well shown in the observations of Kowitz already quoted, while the same sequence of events seems to have taken place in a case of osteomyelitis followed by renal infection and calculi formation in the following case:

Acute osteomyelitis of tibia; spontaneous fracture of neck of femur; bilateral pyelonephritis (pyonephrosis on left side with calcification; multiple bilateral ureteral calculi).

This case previously reported by Dr. Arthur Billings. The following is a brief abstract of the history and findings:

M. T., an Italian boy of nine years, was admitted to the surgical service of Dr. Gibbon in the Pennsylvania Hospital 6-17-21. Two months previous he had had a tonsillectomy. The diagnosis on admission was acute osteomyelitis affecting the left tibia. Dr. Klopp opened and drained the bone on the day of admission. July 13, 1921, Dr. Billings did a subperiosteal resection of the entire shaft of the left tibia and a curettement of the lower end of the adjacent femur. August 3, 1921, left knee joint was aspirated; no pus found. Spontaneous painless fracture of right femoral neck occurred. January 23, 1922, cystoscopy (Dr. Herman). Local anesthesia. Bladder normal. Ureteral orifices normal. Catheters passed to each kidney pelvis. Urine from both kidneys cloudy. No apparent obstruction in ureters, although x-ray shows shadows suspicious of stone. The day after cystoscopy the patient passed a stone per urethram, and several days thereafter several more. All of the stones with the exception of one were passed. X-ray of urinary tract (Dr. Bowen). This is the final report of the many which Dr. Bowen made concerning the kidney. April 25, 1922, the shadow in the left kidney is becoming more and more organized; that is, taking on more of the appearance of calculi. Of the six or seven shadows noted previously in the line of the ureters only one remains. (The patient passed the others per urethram.) This one has a diameter of approximately 1 cm. and lies on the left side. The left tibia shows a satisfactory regeneration. It is out of the question to give all of the x-ray and laboratory reports but it is interesting to note that on admission the urine contained only 2 pus cells per microscopic field. On 7-13-21 the urine was pus free. It was only after 8-4-21 that pus was found in the urine in quantity. Pus from the diseased bone contained staphylococci in pure culture. The same organism was recovered from the bladder urine and from the two kidney pelves. Unfortunately, the stones were not cultured. I am of the opinion that the urinary infection (and calculi formation) in this case followed the osteomyelitis and was blood-borne. It is highly probable that the primary infection was tonsillar.

An apparent acute onset of the urinary infection led to x-ray examination of the urinary tract when the evidence of calcification of the left kidney and the presence of ureteral stone was found. The acute symptoms were apparently the result of an acute exacerbation of a chronic infection which came on insidiously after the patient had been in the hospital some time, as witness the normal urine found during the first month of hospital residence.

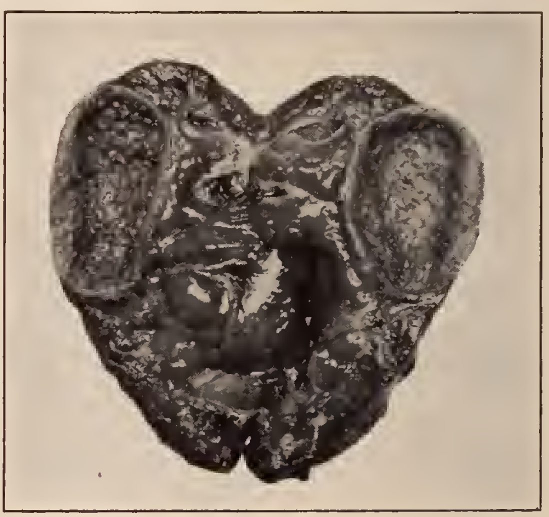


Fig. No. 4

Atrophic pyelonephritis with solitary cyst. The latter was filled with sebaceous-like material and resembled a dermoid. Patient seen in consultation with Dr. John Carson and Dr. Arthur Billings. Operation by Dr. Billings.

LOCAL PREDISPOSING CAUSES OF RENAL INFECTION

Although it is probable that the normal kidneys may become infected, there are certain functional and structural abnormalities of these organs which predispose to bacterial implantation and which probably antedate the onset of infection in the majority of instances. Not only do such factors predetermine the lodgment of bacteria in the kidneys, but they prolong the infection and sometimes render it incurable. Upper urinary stasis, the causes of which are legion, is by far the most frequent of these conditions, but an apparent contributing cause to the infection may in reality be the result of such infection and the differentiation between cause and effect is often extremely difficult.

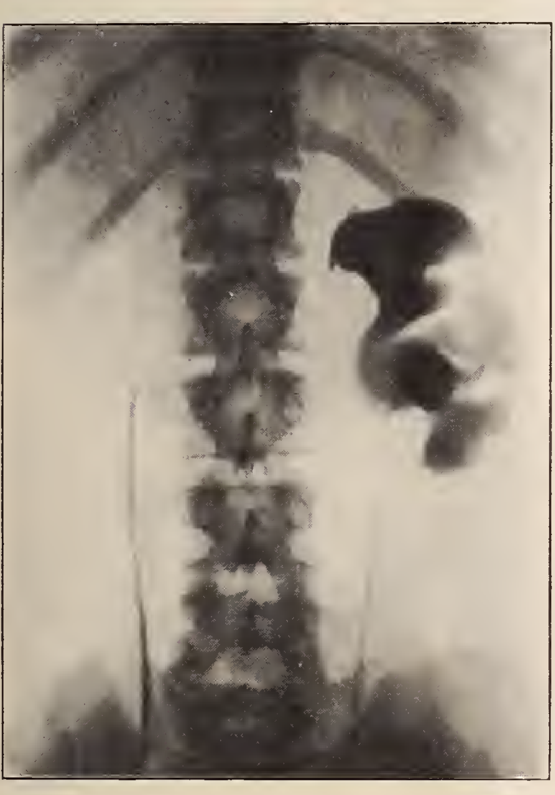


FIG. No. 5

Hydronephrosis affecting the calices for the most part. The true pelvis is comparatively small. This is probably a congenital condition. There was no infection present.

By no means all renal pelves with residual urine become infected. Figure No. 5 shows the pyelogram of the left kidney of a girl aged 14, which is greatly dilated, but the cause of which was not determined. There was neither infection, nor a mechanical obstruction present in this case. We have seen cases of hydronephrosis due to impacted ureteral stones and complicated by acute cystitis in which sterile urine was obtained by catheter from the dilated pelvis.

Mark and Hoffman report cases of hydronephrosis with ureteral obstruction caused by chronic seminal vesiculitis, in which, notwithstanding the predisposition created by upper urinary stasis, infection had failed to occur. In the case described below, a periureteral abscess had caused partial obstruction of the ureter, yet the upper urinary tract had escaped infection. These examples serve to illustrate a well recognized fact; namely, that notwithstanding the presence of mechanical factors favoring infection, the latter fails to materialize in certain instances. If we assign the elimination of bacteria from the blood stream to the kidneys as a normal function, it becomes doubly difficult to explain the failure of infection to take place in these rather exceptional instances.

T. J. S. Male, aet. 33; physician. Chief complaint, burning on urination; frequency; feeling of fullness in perineum.

History of present illness: In 1918, while in army, was taken with sudden acute lower right abdominal pain; slight fever and leucocytosis (19,000). Operated for acute appendicitis. Normal appendix removed. Following operation had a very severe attack of the same pain; this accompanied by hematuria. Had repeated attacks after this, requiring morphine. In 1919 noticed urethral discharge and nocturia. Was cystoscoped and impacted stone found in lower end of right ureter. The stone was broken during the manipulations and half of it was passed, the other half coming away spontaneously six months later. In the fall of 1919 was cystoscoped again on account of burning and frequency and a tentative diagnosis of tuberculosis made on the evidence of lymphoid bodies in the deep urethra. An examination for pulmonary infection was negative. X-ray examination of the urinary tract negative. Lately he has complained of pain in the left testis and left hip.

Examination 2-26-22. External genitalia. Right was somewhat thickened. Small cyst of cord. Epididymis (r), slightly thickened globus major. Left testis somewhat atrophied. Prostate slightly enlarged; smooth and firm. Left vesicle palpably enlarged and somewhat indurated. Urine contained some pus shreds. General physical examination negative.

Cystoscopy 3-7-22. Bladder urine contained flakes of pus. Deep urethra congested. Bladder mucosa normal. In region of right ureteral orifice there was some congestion and edema. Catheters passed with ease to the pelvis of each kidney and urine obtained from each kidney which was perfectly normal chemically, microscopically and culturally. While observing the catheters in situ a thick stream of pus was seen pouring from the right ureter with each ureteral peristaltic wave, around the catheter which at the time was draining normal urine from the kidney pelvis. Approximately one dram of pus was recovered from the bladder after the ureteral abscess had emptied itself. A ureterogram failed to show a diverticulum, although it is obvious that the patient had an abscess at the former site of the calculus. Advised dilatation and local treatment.

The traumatized kidney is altered structurally although the changes may consist merely in slight

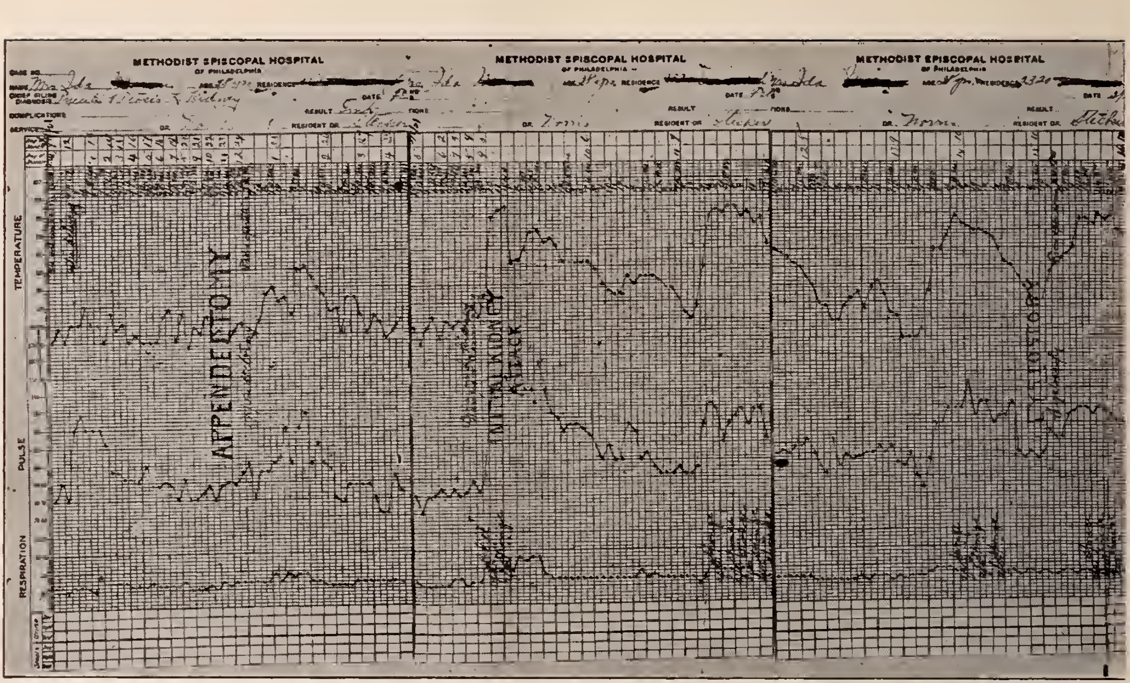


Figure No. 6.—Acute pyelonephritis in movable kidney (left). The movable kidney complicated pregnancy and labor. The kidney infection occurred after appendectomy during puerperium. See clinical history. Note the onset of the kidney infection

degree of congestion. This predisposes to infection, as clinical experience serves to prove, and as Albarran showed, may be produced experimentally by the intravenous injection of staphylococci in rabbits whose kidneys have been injured. The movable kidney may escape structural or physiological alterations but in most instances the abnormally movable organ gives rise to upper urinary stasis and renal congestion, in which event the likelihood of bacterial implantation is increased. It is rare indeed to find an infected movable kidney in the absence of a history of pain indicative of attacks of ureteral occlusion. But to this rule also there are notable exceptions. Large hydronephroses may develop silently and remain quiescent until the onset of infection. In the extraordinary case described below, the freely mobile and greatly dilated kidney escaped infection during pregnancy, a difficult labor and the puerperium. In fact, there were no subjective symptoms or urinary abnormalities until an appendectomy was performed during the puerperium (see Fig. 6) and it is reasonable to suppose that the operation and anesthetic were concerned in the infection of the kidneys. This case further illustrates the remarkable ability of the kidney to handle infection when normal urinary drainage is reëstablished (by nephropexy in this instance) providing the induced structural changes in the pelvis and ureter have not become permanent ones.

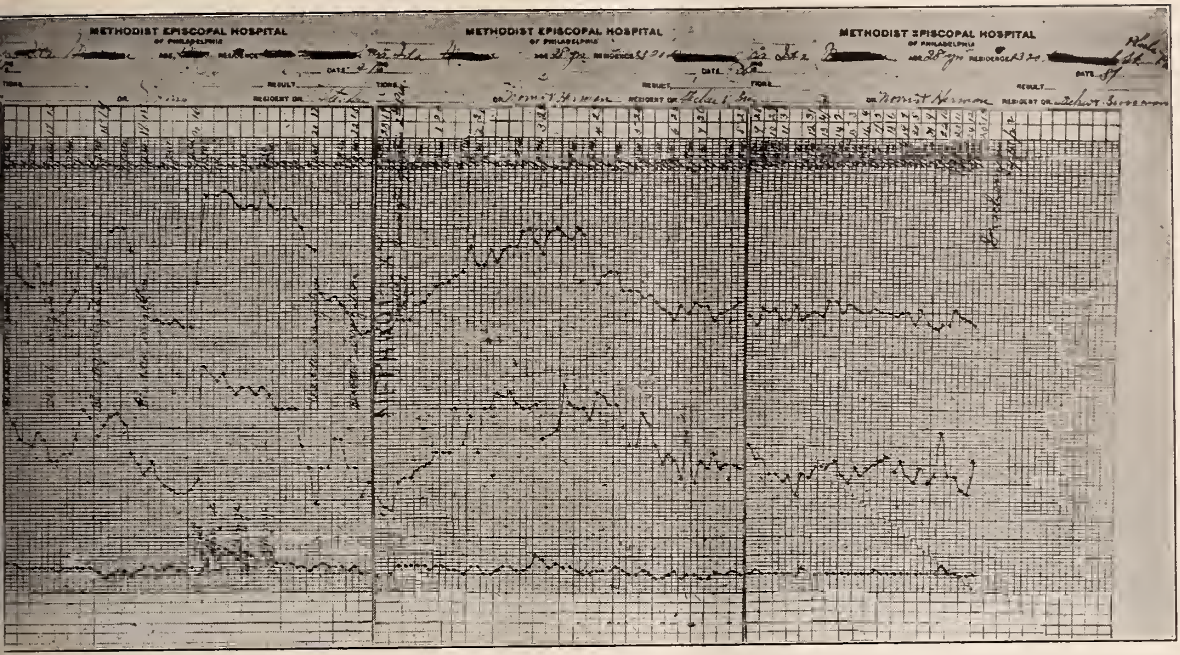
Congenital abnormalities of the kidney and ureter, including polycystic kidneys, hypoplasia of the kidneys and congenital deformities of the pelvis and ureters associated with otherwise normal kidneys are prone to infection, probably because of the imperfection in drainage to which they give rise.

Under the heading of local predisposing factors in renal infections must likewise be grouped the widely diversified causes of upper urinary stasis resident in the lower urinary tract, such as urethral stricture and prostatic hypertrophy.

Acute bilateral pyelonephritis; movable kidney (left) obstructing labor; rapid delivery; appendectomy; nephropexy.

I. M., aet. 28. Admitted to Methodist Hospital 2-11-21. Discharged 4-14-21. Services of Dr. Richard Norris and Dr. Herman. Patient was admitted to the obstetrical service of Dr. Norris one week overdue. Two weeks prior to admission she noticed a mass in the lower left abdomen which was thought to be the child's head. There was no history of previous urinary symptoms and the pregnancy was thought to be entirely normal. Examination revealed a mass in the lower left abdomen which on pelvic examination was thought to spring from the adnexa and to be large enough to interfere with delivery. The mass was movable, not tender, and there were no associated symptoms. The diagnosis of ovarian cyst was made. The fetal position was R. O. P. Rapid delivery, 2-12-21. Cord prolapsed. Baby living but partly asphixiated; died 4 days later. After delivery the tumor was more evident than before and was not only palpable but visible, especially when the patient was lying down.

On 2-24-21, the patient was etherized, whereupon the tumor disappeared. Dr. Norris was of the opinion that the cyst had ruptured and proceeded to explore



after the removal of the appendix and the decline in temperature after nephropexy. The infection disappeared without local treatment after suspension of the kidney.

the abdomen. The pelvic organs were found to be entirely normal and the only abnormality found was an extremely movable left kidney which could easily be brought down into the pelvis. The appendix was removed. Prior to operation the urine was entirely normal and there were no urinary symptoms.

Postoperative course: Four days after operation the patient was taken suddenly with severe pain in the left loin, chills and fever. (The temperature rose to 105.4° F.) The urinary output dropped to 14 ounces in 24 hours. Pyuria developed. Each four days thereafter she had a similar acute attack with the temperature rising to 106° F. She was then referred to the author for cystoscopic examination.

Cystoscopy: Bladder mucosa covered with mucopus. No ulceration and only slight cystitis. Right ureter patulous; hazy urine obtained in normal flow. Left ureter obstructed to all catheters 7 cm. from the normal position of the renal pelvis. Thick purulent urine obtained. Urine from right kidney—few pus cells, B. coli. Urine from left kidney—laden with pus, B. coli in pure culture.

P. S. P.: (1 c.c. intravenously). Appearance time: right kidney, 6 minutes; left kidney, 14 minutes. Total output (15 minutes period): right, 12%; left, 3%.

Blood culture negative. March 5, 1921, leucocytes 20,400. Total P. S. P., 3,-10-21, 43%.

Palliative treatment was advised. The patient was placed in the Trendelenburg posture and Dr. Norris attempted to replace the kidney which had become incarcerated behind the involuting uterus. This was unsuccessful. A second cystoscopy was done, with pelvic lavage, but the patient continued to have acute attacks, so that operation was advised.

Operation, 3-19-21 (Drs. Herman and Stuart). Left kidney exposed through oblique loin incision. Very movable kidney in low position found. Pelvis enlarged and flaccid. Parenchyma in fair condition, although somewhat thin. Nephropexy decided upon, although it was questionable if nephrectomy would not be the safer procedure. Kidney anchored (without decapsulation) to the twelfth rib and loin muscles with heavy silk sutures. Wound closed without drainage.

Postoperative. The temperature after a primary rise to 103, became normal three days after operation and remained so for seventeen days when she was discharged from the hospital. The urine rapidly became normal. With the exception of a stitch abscess from which streptococci were recovered, the convalescence was uneventful. The patient has gained thirty pounds in weight and is now (August, 1922) perfectly well.

REMOTE PREDISPOSING FACTORS IN RENAL INFECTIONS

Each one of the innumerable causes of bacillemia has a predisposing influence in renal infections, but in the light of our present knowledge, chief interest centers in the normal and abnormal habitats of the colon bacillus. Kretschmer attributes the preponderance of B. coli infections in the urinary tract in women to anatomico-physiological peculiarities of the intestinal tract, rather than to sex differences in the length of the urethra and other long accepted explanations. The work of Herrold, quoted above, is perhaps the first proof of the identity of B. coli recovered from the kidney and from the supposed primary focus of infection.

The literature contains no convincing proof that the removal of diseased tonsils or teeth has caused the spontaneous cure of pyelitis, and we have been unable to prove to our complete satisfaction in any case that the removal of such foci of infection was the major factor in the cure of a renal infection. Nevertheless, the work of

Rosenow and of Bumpus and Meissner indicates, if it does not prove conclusively, that infection from these sources may have a specific affinity for the renal tissues.

From a clinical standpoint, the important foci of infection in the male are, in their relative order of importance, as follows: The intestinal tract, especially the appendiceal and anal regions, the prostate gland and seminal vesicles, the skin, the teeth and tonsils and, finally, the gall-bladder. In the female, the intestinal tract and genitalia are the frequent sources of renal infection. In the following case the evidence is rather convincing that the source of the left sided pyelitis was an infected tube on the same side.

Pyelitis (left) complicating pelvic inflammatory disease: G. D., female, colored, age 27, admitted to Pennsylvania Hospital, 12-10-19, complaining of pain in the back. Present illness: Perfectly well until July, 1919, when she was confined to bed for several weeks with headaches, fever, loss of appetite and pain in the right loin. She recovered slowly and was getting along nicely until three months ago when she was taken with severe pain over the right kidney and later with hematuria. The bleeding stopped after a week but the pain continued and has been present ever since. The hematuria reappeared one week before admission and is still present. Past medical history was negative.

The physical examination was negative except for the following: Deep tenderness over the appendiceal region. Pelvic examination (Dr. Robert LeConte): chronic bilateral salpingitis and fixation of the uterus.

December 29, 1919, complained of burning on urination and terminal hematuria.

December 30, 1919, general physical examination (Dr. Norris) was negative. December 13, 1919, x-ray examination of urinary tract was negative (Dr. Bowen). January 8, 1920, Dr. Norris reported slight tenderness over left abdomen. Marked tenderness in left loin.

January 8, 1920, cystoscopy (Dr. Herman): Slight congestion in region of left ureteral orifice. Bladder otherwise normal. Cetheters passed to pelves. Cloudy urine from left kidney; clear urine containing few flocculi from right kidney.

P. S. P. (1 c.c. intravenously). Appearance time: right, 6 minutes; left, 16 minutes. Fifteen minute collection: right, 22%; left, 5%.

Patient apparently had infection of left kidney; right kidney functionally normal. January 13, 1920, patient complained of moderate pain in right wrist and ankle, which were swollen and tender. Less pus in urine. January 13, 1920, total P. S. P. 85 per cent for two hour period. Cultures from kidney (1) showed colon bacillus in pure culture.

An interesting feature of the case was the apparent transfer of pain from the diseased to the uninfected kidney.

Laboratory findings: right kidney, no casts, W. B. C. or R. B. C.; no albumin or sugar. Urine: left kidney was loaded with W. B. C. and R. B. C. January 15, 1920, differential P. S. P. Total function of left kidney for 30 minutes period, 11 per cent. January 25, 1920, pyelography: capacity of left pelvis, 15 c.c. The pelvis was duplicated. The minor calices were dilated and "feathered." February 7, 1920, pain in left loin had recurred. Patient seen in consultation; diagnosis of pelvic inflammatory disease, left sided pyelitis, and arthritis (gonococcal) made. Patient transferred to surgical service for operation.

February 18, 1920, bilateral salpingo-oöphorectomy and appendectomy (Dr. Mitchell). The immediate surgical convalescence was uneventful but the patient suffered from the arthritis. The urine became pus free without local treatment. Several months later she became irrational with hallucinations, etc., and was removed from the hospital.

April 20, 1920, cystoscopy (Dr. Herman). Clear urine obtained from both kidneys. The function was equal and normal, the two kidneys doing equal work.

Note: This patient had left sided pyelitis which has cleared up since the removal of the diseased tubes and ovaries.

Nonvenereal infection of the male genitalia associated with pyelitis is usually secondary to the latter, while pyelitis in association with chronic prostatitis and seminal vesiculitis is almost always dependent upon the latter. A considerable proportion of these cases prove to be tuberculous, but in the absence of this, the pyelitis is extremely difficult to cure and any improvement noted is transitory unless the genital infection shows marked improvement with treatment.

THE DIAGNOSIS OF SIMPLE PYELITIS

Kidney infections are rarely overlooked by those who consider persistent pyuria, however slight, as an indication for cystoscopy. Nevertheless, many patients are subjected to needless abdominal operations for the relief of symptoms arising from an infected kidney. We examined a patient recently with a large hydronephrosis who had had an appendectomy and an upper abdominal exploration without relief of symptoms which were undoubtedly of renal origin. Throughout the course of the patient's illness there was a slight pyuria, the presence of which was disregarded. It is important to remember that the intensely inflamed pelvic mucosa may be associated with only a slight amount of pus in the urine, and yet give rise to more marked symptoms than pyelitis associated with pus-laden urine. The real difficulty lies, however, in differentiating simple pyelitis from pyelitis associated with lesions which may antedate, or arise subsequent to, and be dependent upon the renal infection. Or the pyelitis may prove to be secondary to, and be of minor importance in relation to a primary lesion in the renal parenchyma or elsewhere. When the major pathology is cortical, the pyelitis is usually relatively insignificant, and similarly, in mechanical defects of urinary drainage, the pelvic infection is usually incidental and often disappears quickly when the fault is corrected.

The majority of cases of uncomplicated

chronic pyelitis are bilateral. Unilateral pyelitis in the absence of an antecedent history of acute onset is rarely uncomplicated, but having demonstrated the presence of pus in urine taken directly from the pelvis, the diagnostic problems become in large part the correct interpretation of data obtained cystoscopically.

Having determined the presence of pus in the kidney, it is important to measure the pelvic capacity. If a unilateral infected and dilated pelvis is found in the absence of an obstructive cause, differentiation must be made between simple pyelitis with atonic dilatation of the pelvis, congenital pelvic dilatation with infection, infected acquired hydronephrosis, and pelvic enlargement due to rare causes such as polycystic kidney with infection. Such differentiation can usually be made by means of differential functional studies (phthalein), since atonic dilatation due to the infection of an otherwise normal pelvis is rarely associated with marked degrees of functional depression. In bilateral cases, study of the blood chemistry yields valuable information regarding the degree of functional alteration.

Interstitial pyelitis, which causes contraction of the pelvic walls and consequent diminution in pelvic capacity, is incurable by conservative measures, although much benefit may be derived from pelvic lavage, especially in bilateral cases.

The diagnosis of simple pyelitis may be made correctly in the majority of instances when the following conditions are fulfilled:

(1) The demonstration of pus in urine obtained by catheter from the renal pelvis.

(2) The demonstration by smears or by culture of bacteria in urine thus obtained.

(3) Proof by the study of smears and by guinea pig inoculations of the absence of the tubercle bacillus.

(4) The failure to find complicating lesions elsewhere in the body (pulmonary, lymphatic or bone tuberculosis, lesions of the intestinal tract, etc.).

(5) Negative x-ray findings of chest and urinary organs.

(6) An approximately normal function of the infected kidney.

(7) Only moderate dilatation of the renal pelvis.

(8) The absence of a complicating lesion (mechanical or infectious) of the lower urinary tract and sexual organs (male).

All of the above conditions were fulfilled in the following case until a second x-ray examination yielded the following information: "There is a calcareous mass, probably gall-bladder, or located in the region of the gall-bladder. The pyelogram (Fig. No. 7) shows a filling defect of the true pelvis at the site of the calcareous area, and on these data the diagnosis was made."

Tuberculosis of the kidney confined largely to the pelvis; calcification of the tuberculous area: S. H., female, age 17. Admitted to Methodist Hospital 4-25-21. Discharged 5-23-21. Chief complaint: frequent and painful urination.

History of present illness: In September, 1920, began to have frequency of urination and some burning. The symptoms had grown progressively worse and at this time, had nocturia 7 or 8 times. No hematuria. No general symptoms. Family history negative.

Physical examination negative, except for slight tenderness in right loin. Urine contained moderate amount of pus. Culture showed colon bacillus in pure culture. No. TB. found in many specimens examined prior to making a pyelogram, after which they were found in the smears.

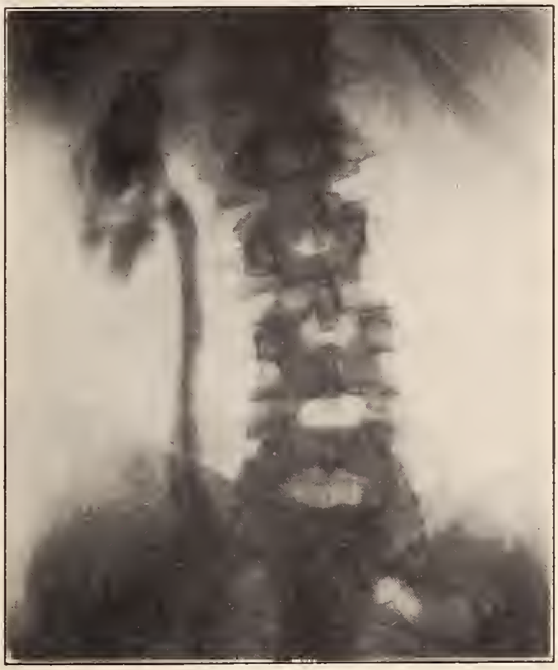


Fig. No. 7

Pyelogram of case of tuberculosis of the renal pelvis. Note the filling defect of the true pelvis. An area of calcification was seen in the x-ray plate taken prior to the pyelogram. This was situated at the site of filling defect. The parenchyma was slightly involved.

Laboratory findings: 4-25-21, P. S. P., 1st hour, 25 per cent; 2d hour, 7 1-2 per cent. Blood urea, 12 mgms. Wassermann negative. May 2, 1921, P. S. P., total for two hours, 25 per cent. Hb., 70 per cent; R. B. C., 4,400,000; W. B. C., 6,000. Blood sugar, 0.129.

X-ray report, 4-25-21: Calcareous areas over region of pelvis of right kidney. This is probably gall-bladder (Dr. Percival). Differential kidney studies showed diminution in function of the right kidney with normal left kidney. Pus and colon bacilli were obtained from the right kidney; normal urine from the left kidney. Tubercle bacilli were not obtained until after pyelogram, when they were recovered from the right kidney.

Pyelography: There is a filling defect in the region of the pelvis of the right kidney (see Fig. No. 7) corresponding to the location of the area of calcification shown in the previous x-ray studies. May 4, 1921, right lumbar nephrectomy (Drs. Herman and Stuart). Pathological report (Dr. Richardson): Area of calcification in the pelvis of the kidney, the pelvis being somewhat enlarged. The cortex contains several small abscesses. Microscopically, these areas are typical of tuberculosis. The pelvic tuberculosis has undergone calcification. Postoperative course uncomplicated.

In the event of failure to find characteristic changes of tuberculosis in the bladder surrounding the ureteral orifices, or tubercle bacilli in the urine, the very early or the very chronic cases of tuberculosis may escape recognition, but in all except the most exceptional cases, the disease causes considerable destruction of renal function. In other instances, the failure of a renal infection to respond to local treatment may suggest its tuberculous nature and lead to pyelographic studies, when changes characteristic of ulcerative papillitis will usually be demonstrable.

The most important complicating factor in renal infections is stone. The differential diagnosis between pyelitis with and without stones in patients with characeristic clinical symptoms but with negative x-ray findings, is fraught with the greatest difficulty. We have succeeded in demonstrating the presence of stones negative to the x-ray by preliminary injection of the kidney with sodium iodide solution (15%). If the stone is small, soft and porous, the probabilities are that it will absorb enough of the iodide solution to cast a shadow. The method has been successful in our hands in four cases; we are unable to comment on the percentage of successes and failures with this procedure.

Stricture of the ureter is a rare complication of pyelitis in the male and also, in our experience, in the female. Strictures of the ureter which do not cause ureteral dilatation could scarcely contribute to the persistence of a pelvic infection. Ureteral dilatation (excluding those cases due to atony from nerve lesions, congenital dilatation, dilatation due to descending ureteritis, extra-ureteral pressure, etc.) is usually dependent upon strictures, or calculi located at or near the bladder. In these cases the upper urinary infection cannot be controlled until the ureteral obstruction is removed.

In a certain proportion of cases a primary pyelitis gives rise to intense cystitis, and our first efforts must be directed against the bladder infection, on account of the difficulty of instrumentation. Many years ago Cabot recommended suprapubic drainage in the treatment of severe chronic bilateral pyelitis, and this method is applicable in cases complicated by severe cystitis, especially of the encrusted variety. Several years ago we examined a man, aged 64, who had at that time a bilateral colon bacillus infection complicated by cystitis of moderate degree. Local treatment was advised but not carried out. One year later he reappeared with an extensive encrusted cystitis which precluded instrumentation and it was necessary to drain the bladder before local treatment of the kidneys could be undertaken. The final result was satisfactory in this and other cases in which a small inflamed and intolerant bladder prevented lavage of the kidneys as the primary measure in the treatment.

The secondarily infected polycystic kidney presents an interesting problem and the correct cilinical diagnosis is seldom made in the absence of bilateral palpable enlargement of the kidneys. This abnormality is invariable bilateral but only one organ may have become palpably enlarged when an intercurrent pyelitis brings the patient to the surgeon. Both kidneys may be considerably enlarged but not palpably so. Examples of each of these clinical types have been admitted to the Pennsylvania Hospital during the past three years. The first case, a woman of middle age, was admitted to Dr. Stengel's service with abdominal swelling and irritability of the bladder. Dr. Stengel's clinical diagnosis of infected polycystic kidneys was confirmed by cystoscopic studies, pyelograms, and postmortem examination. (Fig. No. 8.) The second patient came to the surgical service of Dr. Robert LeConte complaining of pain in the left loin. The diagnosis on admission was renal calculus. Differential phthalein studies showed dimunition in function of both kidneys, in probable explanation of which there was bilateral colon bacillus infection. Pyelography was undertaken without any suspicion of the presence of polycystic kidneys and we were surprised to find pelvic changes characteristic of this condition, together with enormous enlargement of the outlines of the kidneys, notwithstanding that the organs were not palpable. The difficulties of eradicating infection in cases of this kind would seem to be insurmountable, although in the third case the infection disappeared. The latter case was seen in consultation with Dr. Carnochan, of Princeton, N. J., in April 1922. One week prior to this the patient had been taken suddenly with a typical attack of acute pyelitis. At the time of our first examination the patient was found to have pyuria, a temperature of 107° F., and a large tender mass in the upper right abdomen. A tentative diagnosis of infected movable kidney was made. The complete record of the case is as follows:

Bilateral acute pyelonephritis; congenital polycystic kidneys: A. B., aet. 38, male. Seen with Dr.

Carnochan, Princeton, N. J., 6-1-22. Duration of illness one week. Began with chill, high temperature, sweating, pain in the right loin and frequency of urination.

At time of first examination temperature was 107° F. A tender mass was palpable in the right loin space. A tentative diagnosis of infected movable kidney was made. Patient referred to the Pennsylvania Hospital, Philadelphia. Admitted to hospital 6-3-22; discharged 7-6-22.

Examination on admission: Abdomen negative except for presence in the right loin of a slightly tender mass, the size of a small grapefruit. This moved with respiration. Mass had the general outline of a large kidney in a low position. Genitalia negative.

Cystoscopy 6-6-22: Local anesthesia. Bladder urine contained flakes of mucopus. Very slight cystitis. Bladder tolerant. Both ureteral orifices slightly congested. Ureteral catheters (size No. 6 F.) passed to pelvis of each kidney. No apparent shortening on right side. Normal intermittent flow of urine without evidence of pelvic dilatation. Specimens of urine from each kidney to laboratory. Urine from both kidneys cloudy. Appearance time of phthalein (intravenous injection), R. 5 minutes; L. 5 minutes.

Cystoscopy 6-8-22; Phthalein appearance time, r. 5 minutes; l. 7 minutes.

Differential kidney study: Percentage output, 15 minute collection, r. 10 per cent; l. 45 per cent.

Note: All evidence points to bilateral infection of the kidneys with considerable destruction of function on the right side.

Pyelography. (R) The outline of the true pelvis is narrowed with elongation of the lower major calyx. Dr. Bowen reported as follows: "There is some pathological change profoundly changing the contour of the lower boundary of the pelvis of the right kidney and of the lower calyx. It would appear to be the encroachment of a smoothly spherical tumor."

Under the fluoroscope, with the pelvis injected, the latter seemed to be separate from the tumor, which could be moved apparently without moving the pelvis shadow. From this evidence, and before a careful study of the dried pyelographic plate was made, the tumor was considered to be extrarenal or springing from the renal capsule at the lower pole. Chest examination June 18, 1922, by Dr. Newlin, negative.

Laboratory examinations: Leucocytes (June 8, 1922), 26,200; June 14, 1922, 21,000.

Blood chemistry: Urea nitrogen 29 mgm. Non-prot. nitrogen 54.2. Sugar 0.99. Total phthalein (June 4, 1922) 50%.

Urine from right kidney: Ft. Tr. albumin. Many pus cells. Few hyaline casts. Bacillus coli. Urine from left kidney: Numerous pus cells. Few hyaline casts. Bacillus coli.

Operation June 20, 1922: Exposure of the right kidney, which was found to be polycystic, with extensive perirenal adhesions. Cultures from cyst contents showed B. coli and streptococci. Closed without drainage. The postoperative course was uneventful. The fever subsided, the urine gradually became pus free and the patient was discharged July 6, 1922, in very good condition, and has since remained well.

THE PROGNOSIS OF SIMPLE PYELITIS

The following quotation is taken from Guiteras' modern textbook of urology: "So far, covering a period of nine years that cases of pyelitis have been treated by lavage of the renal pelvis, there is not a history of a single case that has been cured by this method." Contrast this with the results obtained by Kretschmer in a series of 200 cases, 66.4 per cent of which were cured by local treatment. Kretschmer claims that 48.2 per cent of the cases treated by pelvic lavage were cured by a single injection of 2 per cent silver nitrate. The majority of observers would, I believe, take a more conservative view than Kretschmer's results would seem to justify. Simple uncomplicated pyelitis responds to pelvic lavage with surprising rapidity and the infection is actually destroyed in a far greater proportion of cases than in those treated medically. Acute pyelitis will subside with medical treatment alone in most instances, but the infection frequently remains in a quiescent form. The majority of cases of pyelitis of pregnancy are cured clinically by expectant treatment but a slight pyuria persists and in a definite proportion of these cases the infection proceeds insidiously, often with an occasional acute exacerbation, to the development of surgical kidney.

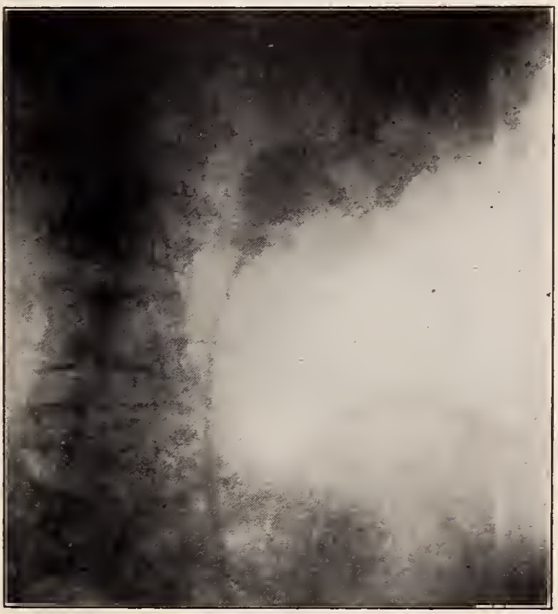


Fig. No. 8

Pyelogram of infected polycystic kidney.

In our experience, the complicated cases of pyelitis outnumber the simple cases, and we find it impossible to obtain as large a percentage of cures as claimed by others. The results of pelvic lavage in uncomplicated pyelitis are brilliant, but recurrences are not uncommon, especially in colon bacillus infections.

Fig. No. 9 shows the pyelographic outline of the right renal pelvis with uncomplicated colon bacillus pyelitis, which responded promptly to instillations of 2 per cent silver nitrate solution.

After three treatments, the clinical cure was absolute and the urine was pus free and sterile on several occasions, and remained so for some time but there have since been recurrent attacks of symptomless bacilluria. All of the bacilli are secreted by the right kidney. This patient had an appendiceal abscess some years ago which was drained without removal of the appendix, which may or may not have had some relationship to the pyelitis.

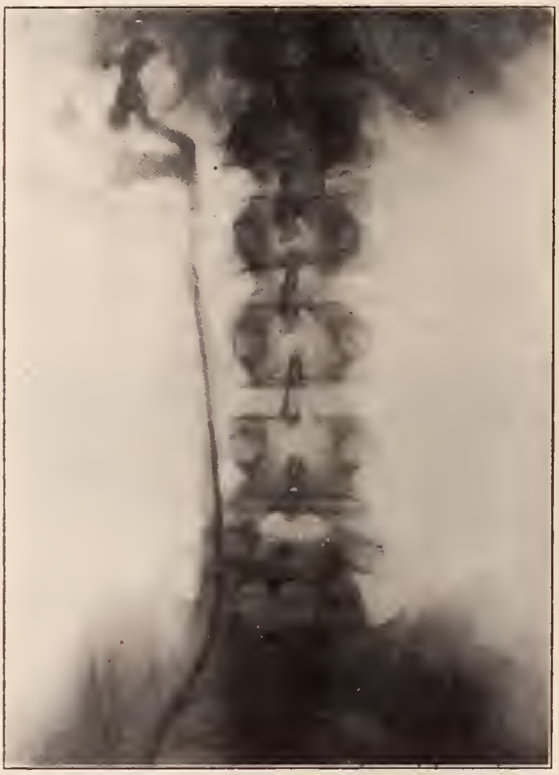


Fig. No. 9
Pyelogram of infected kidney.

Pyelitis due to chronic intestinal lesions is usually persistent unless the intestinal infection can be removed or brought under control.

Infections of the congenitally abnormal renal pelvis are difficult to cure, the difficulties in these, as in other cases of pyelitis, being in direct ratio to the degree of parenchymal involvement as measured by functional tests.

Simple pyelitis caused by organisms other than the colon bacillus are especially rebellious to treatment in most instances. The large proportion of upper urinary infections which cannot be cured permanently can, at least, be kept under control by proper hygienic, medicinal and local treatment.

TREATMENT

The treatment of complicated pyelitis will not be dealt with here; our remarks apply only to simple cases. Each patient with pyelitis should have a most painstaking general physical examination, not only in the search for focal infections, but as the means of ascertaining the patient's general resistive powers and the presence of complicating diseases that would tend to favor the persistence of any infection.

Demonstrable foci of infection should be removed but we have seen little or no benefit follow the removal of diseased teeth and tonsils in adults with colon bacillus pyelitis.

In cases of pyelitis complicating inflammatory disease of the pelvic organs in women, we advise removal or treatment of the diseased tubes and ovaries as the primary step in the treatment. We have seen cases of this kind, which after failing to respond to local treatment of the infected kidney, clear up in some instances without local treament postoperatively after removal of infected tubes.

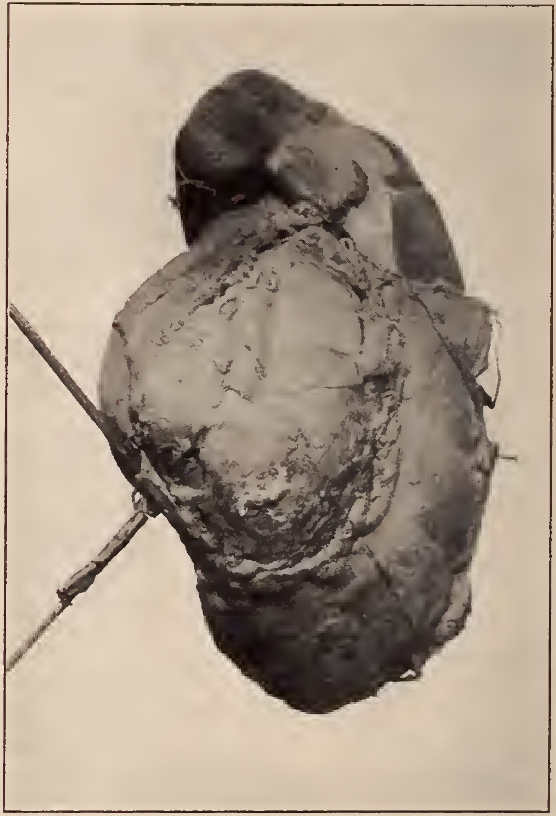


Fig. No. 10
Hydronephrosis caused by aberrant vein crossing the ureter at the uretero-pelvic junction. Note how the abnormal blood vessel encircles the pelvis. The ureter was partially strictured at the point of crossing. The preoperative diagnosis (made by pyelography) was infected hydronephrosis due to congenital stricture of the upper ureter.

Complicating intestinal lesions which cannot be controlled by medicinal treatment such as colonic irrigations, etc., render the prognosis of pyelitis extremely poor as far as complete cure is concerned, but lavage serves to control the infection.

The administration of the Bulgarian bacillus and bacillus acidophilus in colon pyelitis has been of no benefit in our experience.

Autogenous colon bacillus vaccines are of value occasionally, but they fail more often than they succeed in influencing inflammation of the kidney pelvis, even in the simple cases in which they might be expected to do the most good. Vaccines should never be used until complicating lesions have been excluded, and then only as an adjunct to local treatment. Our best success with vaccine therapy in renal infections has been in the treatment of pyelitis in children.

Some authorities advocate the primary administration of alkalies followed by acidification of the urine. In acute cases, including the acute pyelitis of pregnancy, which should be treated medically at the outset, the alkalies are extremely useful. We prefer alternate doses of sodium bicarbonate and potassium citrate until the urine becomes strongly alkaline, when the dose is reduced to the point where the urine is kept moderately but persistently alkaline in reaction.

Acute pyelitis responds satisfactorily to pelvic drainage, but lavage must be done with great caution if at all, lest overdistention add to the inflammation. In severe cases characterized by high temperatures, chills, marked leucocytosis, etc., it is advisable merely to place a catheter in the pelvis. The instrument may be kept in place for several days or more, and as conditions warrant it, instillations may be made. Pyelography should never be performed in the acute stages of pyelitis.

In the majority of chronic cases, small doses of urotropin (gr. 3, t. i. d.), with large doses of acid sodium phosphate (gr. 15, t. i. d.) are distinctly beneficial, but are merely adjuncts to local treatment.

In the exceptional case, lavage may be followed by severe systemic reactions and must be discontinued. In the very rarest instances a cortical infection becomes activated, with the eventual development of a surgical kidney.

Our preference in the treatment of chronic pyelitis is for the alternate weekly or bi-weekly instillation of ½ to 2 per cent of silver nitrate solution and 1 per cent solution mercurochrome. Silver solutions of this strength cause superficial erosions of the pelvic mucosa, and probably also of the tubular epithelium, but no serious harm results from the use of solutions up to two per cent strength. We would hesitate, however, to follow Geraghty's suggestion and use five per cent solutions.

Some of the most brilliant results in urological practice are attained by pelvic lavage in the treatment of pyelitis, and likewise some of the most dismal failures. The latter are often found, on further examination, to depend upon factors that should have served to contraindicate local treatment from the beginning. No form of treatment should be undertaken in chronic cases until all diagnostic measures have been exhausted, and the considerable effort involved will be well repaid by more uniformly good results.

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DISCUSSION

DR. THOMAS C. STELLWAGEN (Philadelphia, Pa.): Dr. Herman's paper has proved to be extremely interesting. The whole problem of kidney infection is at the present time obscure. It is my opinion that most kidney infections are due to the colon bacillus, and have their origin in a similar condition which has occurred in early childhood. Colon bacillurias are fairly common in young children and are attended by a course of temperature, which may often simulate some peculiar type of fever, as typhoid or malaria, so closely as to be confusing. Under treatment a clinical cure is rapidly effected. Rest in bed, with the conventional urinary antiseptics, are administered. It is likely that the latter function more actively in appeasing the mind than in the arresting of the inflammatory process. The child is considered cured and goes on to adult age, when marriage becomes the natural course. Then, in the case of the female, and during the first few months of married life, kidney infection may again become manifest. The individual presents a pyelitis, and a pyelitis which is of colon bacillus origin. What could be more reasonable than to assume a relighting of an old and quiescent infection? Drainage and lavage are sufficient to effect a symptomatic cure in many of these cases; but unfortunately a bactriological cure—an eradication of the infection—is a much more grave and uncertain problem. The best results seem to be secured with lavage accompanied by the use of vaccines. Most authorities speak of three degrees of infection—the mild, the medium and the severe.

The essayist has shown an apparent connection between pyelitis and deformities of the kidney pelvis; and holds that such abnormalities are a likely etiologic factor, because of improper drainage produced. I am of the opinion that his inference is correct; and also that such conditions warrant surgical intervention, provided too great operative risk is not entailed. However, conservative plastic surgery upon the kidney pelvis is not to be undertaken so lightly as some statisticians would seem to have us believe. The term statistician is used advisedly, since numerous reports are statistically perfect yet surgically unsound.

The exact status of the pyelogram and its position as a diagnostic entity is one that must be carefully considered. It is by no means always reliable, and we must consider many problems of interpretation. It has been my experience that wide variations in the pyelogram may and do appear, at different times in the same individual. Various reasons may be assigned as a cause, such as: pressure of the radiopaque solution, position of the patient, or variations in the bowel content. But be it from whatever cause the fact remains that it does occur; and the surgeon must ever have this fact in mind. Diagnosis of what the kidney pelvis contains is bound to be fraught with uncertainty. I have found conditions within the kidney pelvis at times quite different from those which I had expected to find after study of the pyelogram. It is imperative that the pyelographic and cystoscopic studies be made by a competent team, consisting of a urologist and a radiologist.

It has been our practice for some time in the Jefferson clinic to pyelograph but one kidney at a time. We have had a death apparently from acute suppression, due as we believed, to the injection of both pelves at the same time. It must obviously be bad surgical practice to distend both kidneys, especially when one or both are diseased.

There is one point upon which I take issue with Dr. Herman, and that is the practice of stitching the kidney in place. Practically all of the nephropexy operations that rely upon decapsulation of the kidney, with subsequent fixation to the twelfth rib or other structures, must of necessity put a half turn in the pedicle or place the organ in a tilted position. I prefer DaCosta's modification of the elder Simms' technique, which truly places the kidney well up in its normal position. There are, to be sure, some admitted objections to this operation; but these are more than counterbalanced by the results obtained. We have all seen not only recurrence of the condition, but actual dislocation of the kidney, follow the stitching operation.

It is unquestionably true that in the past, many kidneys have been sacrificed which could have been saved. I am distinctly in favor of conservative kidney surgery. It is remarkable how small a portion of kidney structure will function to support life. A case of Dr. Gibbon's comes very vividly to mind, in this connection. A doctor who had previously undergone nephrectomy for tuberculous kidney required a second operation upon the remaining organ. Two large tuberculous abscesses were incised, carbolized and drained. Yet this patient recovered, did well, and lived for some years in comparative comfort. However, let us not overlook the importance of favorable climatic conditions in the treatment of genito-urinary tuberculosis. Certainly such an environment as our own is not satisfactory for these cases.

In all kidney infections it is imperative that the surgeon or investigator be not blinded because a predominating colon bacilluria is found. This condition may only mask tuberculous infection. It is my practice to consider all such conditions as potential tuberculosis, and to regard them with suspicion.

Dr. John B. Lownes (Philadelphia, Pa.): I think Dr. Herman is particularly interested in the pathogenesis of kidney infection, and I am sure we all are, since we now know it to be of frequent occurrence.

The majority of the cases of pyelitis and pyelonephritis present rather definite predisposing causes, whether they be of the ascending or descending type. Back pressure, due to obstruction of some part of the urinary tract is the cause of the kidney becoming infected sooner or later. Focal infection elsewhere in the body, frequently will attack the kidney. Should both of the predisposing causes just mentioned be present, renal infection is assured.

Not infrequently, however, a case presents itself in which the etiology cannot be determined, even after the most exhaustive study. It may be that the cause was transitory, and no longer exists at the time the case is studied. The fact remains that some few are unaccounted for; fortunately, however, a rather small percentage, thanks to the almost perfected present-day methods of renal study.

Dr. Alfred C. Wood (Philadelphia, Pa.): You are all familiar with the experiments showing that you can put bacteria into the urinary bladder or into the gallbladder and yet if there is perfectly free drainage, no infection results; but if free drainage is obstructed, and there is some back pressure, almost invariably infection results. The reason that good results have followed when an infected kidney has been hitched up to the twelfth rib may be because by straightening out a little obstruction in the ureter and giving good drainage the infection is overcome, and so when you irrigate certain cases of pyelitis a few times and have a cure, it may have been that passing the catheter has relieved some obstruction which had kept up some back pressure and thus prolonged the infection.

Dr. Herman (in closing): In conclusion I want to call to your attention the probable influence that bacterial toxemia plays in causing a condition of the kidney predisposing to the implantation of bacteria. It is altogether likely that the toxic influence antedates the bacterial implantation in most instances, and it is reasonable to believe that in the absence of this effect the bacteria would pass through the kidneys in many instances without setting up an inflammatory process. Clinical illustrations of this sequence of events are quoted from the writings of Kowitz, and we have described in detail a case of osteomyelitis and renal infection which illustrates the same thing.

COMPLETE TONSILLECTOMY*†

REID NEBINGER, M.D.

DANVILLE, PA.

Tonsillectomy has become such a common procedure that I hesitate to offer it as a subject for consideration before this section. However, it seems to me too often we fail to do a complete operation and we are still leaving too many remnants. Several statistical papers published within the year covering thousands of cases with high percentages of reoperations have further convinced me that we are failing at some point.

I want to say at the outset, that I have no intention of advocating any method as perfect, nor do I mean to enter into controversy as to the choice of anesthetic to be used. Those are matters to be left to the individual operator.

I have always been much interested in the examination of cases in which some form of tonsil operation had been done. In the routine work at the Geisinger Memorial Hospital, there is an opportunity of inspecting all patients before their discharge and at subsequent intervals until healing is complete. The results are not always what I should like to see. There has also been an opportunity to examine no inconsiderable number of patients who had been operated elsewhere but who were still complaining of trouble referable to the throat. The majority of these cases fully believed that a complete tonsillectomy had been done and were assured that this was the fact. Some interesting points have come up in the course of these examinations and I have decided to bring these before you. Similar experiences on your part, if any, may bring forth discussion that will prove of benefit to all of us.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

† From the Department of Eye, Ear, Nose and Throat, The George F. Geisinger Memorial Hospital, Danville, Pa.

It is the pride of every operator to be able to offer for inspection the clean, symptomless throats of his patients and as they go elsewhere to feel that they will pass the acid test of rigid examination by a possibly none too friendly contemporary. The after appearance of the throat is the criterion by which our work is judged, regardless of whether the original symptoms have disappeared or not. In my opinion, this is entirely proper, for the following reasons: We may have operated upon a certain case for purely local symptoms. A later inspection may show that considerable tissue has been left in the throat. The patient may be free from trouble, at least temporarily, but this should be considered a poor operative result. A second case, showing general symptoms for which the tonsils are responsible, may have no trouble locally, yet the tonsils are focal points. In either case an incomplete operation is almost certain to be followed by poor results.

We are all acquainted with the appearance of a throat which has had a tonsillotomy. This operation is done as a partial removal only and one expects to see varying amounts of tonsil tissue remaining. The results are so consistently unsatisfactory that tonsillectomy, at first timidly advised, is now definitely advocated as the operation of choice. Going over the histories of these cases the fact can be brought out, with few exceptions, that they have had more trouble following the tonsillotomy than before. For this reason the operation has been practically abandoned.

The next group of cases is that represented by partial tonsillectomy. Note that I do not classify these as tonsillotomies, since the obvious intention was complete removal. This was so reported to the patient's family in most instances. Certainly, no condemnation can be too severe as applied to this type of incomplete operation. In the tonsillotomy one expects to find considerable tonsillar tissue remaining; on the other hand, the partial tonsillectomy gives the patient a feeling of what is certainly a false security and the return of symptoms causes him to doubt the efficacy of tonsillectomy. This reflects discredit upon the specialist. When this type of case falls into the hands of a friendly coworker, the patient is told that his tonsils have "grown in again." In these days of more exact medicine and general enlightenment along scientific lines, the more intelligent class of parents can no longer be satisfied by this obsolete excuse for poor tonsil surgery. Operators in this class either have had insufficient or no technical training or they are not fully impressed with the importance of the work at hand. Too often it is the general surgeon who errs in this way, although there are many who do a clean operation.

There is a rather rare experience which might at times be responsible for poor end results when one must complete the operation quickly; for example, hemorrhage, and the poor condition of a patient. One is not entirely satisfied under such conditions, but must hope for the best under unfavorable circumstances.

The third and last group and to me the most interesting of all, for the reason that it really furnishes the subject for this paper, comprises cases of complete tonsillectomy, operated upon in most instances by men of established reputation. In my earlier experience there were numerous cases in which the postoperative examination did not come up to my expectations. At the final inspection of the throat about two weeks after operation there is occasionally found, upon forcibly depressing the tongue, a well-marked nodule of what is apparently tonsillar tissue. This is either continuous with the side of the tongue or in the sulcus just external to it. In a great many cases this nodule takes on all of the functions of the tonsil, especially as it relates to disease, with the possible exception of peritonsillar abscess. In spite of this condition of affairs, there is no doubt in my mind, that the complete removal of the tonsil with its capsule, is accomplished by the type of operation then and still in use. Further emphasizing this point, there come to my notice, from time to time, patients of other operators showing the same condition. When this state of affairs was once recognized, a careful inspection of every case was made while the patient was still upon the operating table. Care was taken to inspect the region of the tongue and the base of the tonsil. In this way, in a great many cases, there was seen a variable-sized piece of tissue attached to the side of the tongue. This remained after the snare had been used to separate the base. As a matter of fact it is often impossible to include this nodule in the first sweep of the snare. It has, therefore, been my practice for some time to use the snare a second or third time, especially in adults. I no longer have to be apprehensive of this apparent regrowth of the tonsil, which I believe is none other than hypertrophied plica.

The appearance and size of this nodule seems to depend upon the individual to a great extent. In some it attains the size of a half tonsil in a very few days after operation, while in others it is scarcely noticeable. We sometimes see a counterpart of this phenomenon in the appearance of strips of lymphoid tissue *behind* the posterior pillars and hypertrophy of the mucous follicles of the pharyngeal wall appearing after tonsillectomy. In not a few cases these hypertrophies are present before operation. I formerly removed them when excessive, but the added trauma and later contraction of the throat caused me to abandon this practice. It may be an effort on the part of nature to reinforce or replace the normal tonsil barrier and it must be borne in mind that if not removed, these patients may continue to complain of recurrent sore throat.

At the Mayo Clinic, a great deal of stress is laid upon a thorough and complete removal of all of the plica, and for the lymphoid hypertrophy in the pharynx, radium is advocated.

In an excellent statistical paper by Coakley and Pratt[1] they found that in their series of nine hundred and twenty-six cases, one hundred and forty-five, or twenty-one per cent, were secondary operations. It is significant that such a large number of private patients required reoperation. This indicates that extreme care must be exercised in every case to prevent the necessity of repeated exposure to the dangers incident to operative procedure.

Frequently there is free and persistent bleeding following the removal of tissue so near the tongue. This often necessitates the use of sutures for control. Add to this the difficulty of working deep in the throats of certain patients, and the frequency with which this apparently insignificant mass is overlooked is accounted for. Our artist has made a drawing of this nodule which is not diagrammatic but from actual observation at the operating table. It is shown grasped by the Allis forceps and put on the stretch, ready to have the snare applied. This is a point I would especially stress: the nodule must be looked for very carefully, as it blends itself readily with the side of the tongue and bottom of the fossa. Before the nodule is grasped, the bottom of the tonsillar fossa will be seen apparently smooth.

Bacteriologically, these hypertrophied nodules or stumps are subject to invasion by the same flora that inhabit the tonsils. This fact has been proved by the studies carried on by Keilty[2] in the laboratories of the Geisinger Memorial Hospital in a series of three hundred cases, which included about twenty-five secondary operations. Like the tonsils, these nodules were placed in sterile gauze as soon as removed and sent to the laboratory, where, after searing the entire surface with a red-hot spatula, cultures were made from the deeper portions of the tissue. He found practically the same types of organisms as are demonstrated in the tonsils removed at primary operation.

CONCLUSIONS

1. We are leaving entirely too many remnants in the throat after tonsil operations.
2. Tonsillotomy fails in most cases, because the source of infection is not entirely removed.
3. Partial tonsillectomy fails for the same reason and also discredits the specialist.
4. Attention is especially called to a nodular remnant which may remain at the side of the tongue following an apparently complete tonsillectomy.
5. This nodule must be eradicated if a perfectly clean after result is to be obtained.
6. Lymphoid tissue behind the posterior pillars should not be traumatized at the time of operation but may be treated at a later date if tonsillectomy does not clear it up.

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2. Keilty: The Tonsils as Foci of Infection. J. Med. Research, Vol. XLII, 4, Sept., 1921.

DISCUSSION

Dr. C. J. Kistler (Lehighton, Pa.): I felt it a great compliment to be invited to open the discussion on so practical and timely a paper as Dr. Nebinger has just read to us. After reading the paper I found very little to discuss and can only make a very general approval of what he has said and, perhaps, emphasize or venture a very personal view on some of the points he brings out.

The advisability, if not the necessity of a complete removal of the tonsil when the operation is at all indicated, is hardly any longer within the field of argument or discussion, with our present knowledge of the pathology of the tonsil and its influence on the system when diseased. If any one attempting this work at all is not able to bring this about, he should leave nothing undone to reach a state of efficiency when only exceptional conditions prevent a complete operation. Those of us who have considerable to do with this operation know only too well that there are some exceptions—conditions beyond our control—and this fact alone, as Dr. Nebinger suggests, should make us very cautious in classifying a colleague, when we may chance on a patient who does not exhibit a "classical" result some months after operation. Personally, I feel like grasping my colleague's hand in sympathy, and I would dread to place myself in the hands of one who has arrived at the stage when he feels that he had no more to learn in this operation, for I would feel that either his experience was quite limited or he was decidedly dishonest with me, as well as with himself. So much for the tonsil proper.

When it comes to removing tissue around or below the tonsil, I feel like stepping more gently and speaking very softly. For some years I have been watching this tissue of which Dr. Nebinger speaks, which seemed to come from nowhere after what I had considered a perfectly clean enucleation at the time of operation. On close inspection it seemed more often hypertrophy of what was the remains of tonsil tissue left on the inner side of a thickened plica, and low down. I invariably inspect carefully each fossa after all bleeding has been checked, and in spite of this, there will come this smaller or larger mass of tissue which shows what are, undoubtedly, follicles. This does not often happen, but because it does occur, I try to remove as much of the plica as I can; and where that has been done it is my experience that very seldom, indeed, does any recurrence of the tissue occur. All of us, no doubt, have many times noticed the mass of lymphoid tissue at the base of the tongue near the base of the tonsil and outside the plica. In my anxiety to leave an anatomically perfect result, I have yielded to temptation and removed this a number of times when it seemed rather prominent. Like Dr. Nebinger, some of the most troublesome bleeding from the plexus of the large veins in this region I have had to handle, has followed this, and after I had compressed and ligated I felt that perhaps I had exposed my patient to greater danger in the prolonged operation than the bit of tissue I got ever would have done, for it is my invariable custom not to send the patient from the table until there is absolutely no bleeding from the tonsil region. So my present feeling is to treat the base of the tongue in the region of the tonsil with the greatest respect, and until one has acquired considerable experience in handling ligatures in the lower and anterior tonsil region, rather to go very slowly with this tissue. I say this, although I ligate practically every case over six years of age, and often below. The usual result is that this tissue will atrophy after a complete tonsil operation, and if not it is more easily handled afterward with cocain and trichloracetic, just as will the mass of tissues behind the pillars, which Dr. Nebinger has also found it well to let alone at the time of operation on the tonsil. While this small mass may be subject to all the bacterial invasions of the larger tonsil mass, the same is true of all the tissue on the whole base of the tongue, as well as the pharynx, which, therefore, should also be removed, if that were a sufficient reason.

I would not for one moment wish to be understood that the removal of this tissue, of which Dr. Nebinger speaks, is uncalled for, or an unnecessary complication of the tonsil operation, or that it should not be attempted. With Dr. Nebinger's undoubted skill and experience, and the splendid facilities under which he works, it is no doubt perfectly justifiable; but with facilities, perhaps second to none, in the hospital where I operate, and after a considerable experience, I feel that a word of caution should be spoken to the unwary to acquire a big stick, and speak softly when entering this phase of tonsil surgery.

Dr. George R. S. Corson (Pottsville, Pa.): I believe I have had longer experience in tonsil work than most of the men present. I have gone through the various stages and have witnessed the various kinds of tonsil work from the days when we removed the tonsils by cautery until the present time. I myself was supposed to have had my tonsils removed by cautery and have had to have them removed again during the past year. Twenty years ago I strongly advocated the complete removal of the tonsil. I was criticized by a very eminent man for this teaching, but I have been teaching it for the last 20 years. I claim that the small piece of tonsil that remains after a part of the tonsil is removed is covered with cicatricial tissue and cannot, therefore, drain and is a source of more trouble usually than the original tonsil. And I have stuck to it until this time. You can realize what satisfaction it gives me after all these years to see you men come around to my way of thinking.

As to the tissue remaining in the lower part of the fossa, I am not so particular about removing all of that lymphoid tissue in this area. It is a question in my mind whether it is tonsil tissue or not. For the last two or three years I have been using the light known as the Cameron dental lamp. With this lamp the tonsils are easily seen and removed, and if there is a pretty deep fossa present I take the light and run it around inside the tonsil fossa and by transillumination locate any little particle of tissue that remains. As mentioned by the essayist, I have all patients report two weeks later to see if there is any particle of tonsil or organized clot of blood which should be removed.

Dr. Fielding O. Lewis (Philadelphia, Pa.): I have long since learned not to criticize another surgeon's tonsil operation. It is impossible to know what condition existed at the time the tonsils were removed. No matter how complete the operation may be for the removal of lymphoid tissue in the tonsillar fossa, doubtless most of us have had cases in which there were some that had not been removed or that showed evidence of recurrence. I feel we should be very charitable in our criticism of another's work.

Dr. George M. Coates (Philadelphia, Pa.): A good many cases similar to those reported by Dr. Nebinger are caused by extensions upward of the infratonsillar nodules, described by Dr. Thos. R. French of Brooklyn. Dr. French has investigated this subject thoroughly and finds that these nodules have a distinct capsule communicating above with that of the faucial tonsil and below with the lingual tonsil, between which two structures they form the connecting link. After removal of the faucial tonsils, it is not uncommon to have hypertrophy of these infratonsillar nodules so that they may grow into the tonsillar fossa, simulating a tonsil that has been only half removed. French has developed a technique for the removal of these masses, and I should suggest that anyone interested should look up the original article in the *New York Medical Journal* or in the Transactions of the American Laryngological Association for 1920.

All operators have at times discouraging results in their tonsil work. The so-called recurrences are most frequently, I believe, due to the cause I have outlined and possibly to other extra-capsular lymphoid nodes in the pillars.

Dr. W. H. Sears (Huntingdon, Pa.): Concerning the criticisms of the operations of other men—about six weeks ago I operated on a patient, in which everything was perfectly clean. The other day the patient came in to see me and in the middle of the fossa was some lymphoid tissue.

Dr. Nebinger (in closing): A prolongation of the lingual tonsils involving the plica is frequently the cause of this nodule as Dr. Coates has well said.

For control of hemorrhage in this area I use a short curved needle and catgut. I have little fear of any uncontrollable bleeding under these circumstances. In our last 350 cases we have had three cases with secondary bleeding. Two occurred within six hours after operation and were controlled by pressure; the last one was a delayed secondary hemorrhage, occurring ten days after operation and required a suture for its control.

SELECTIONS

THE X-RAY DIAGNOSIS OF GAS GANGRENE.

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During the past few months there have occurred in and about Harrisburg four cases of infection by the Bacillus Aërogenes Capsulatus Welchii, two of which were diagnosed by means of the x-ray. The diagnosis was confirmed by the x-ray in the third case which, although it had all of the typical symptoms of gas gangrene, showed no crepitus. The fourth case was diagnosed without the assistance of the x-ray. Gas gangrene is not a new infection, having been recognized in the sixteenth century. It is, however, rather rare in civil life but quite common in warfare. It is usually sudden in its onset and very disastrous in its consequences.

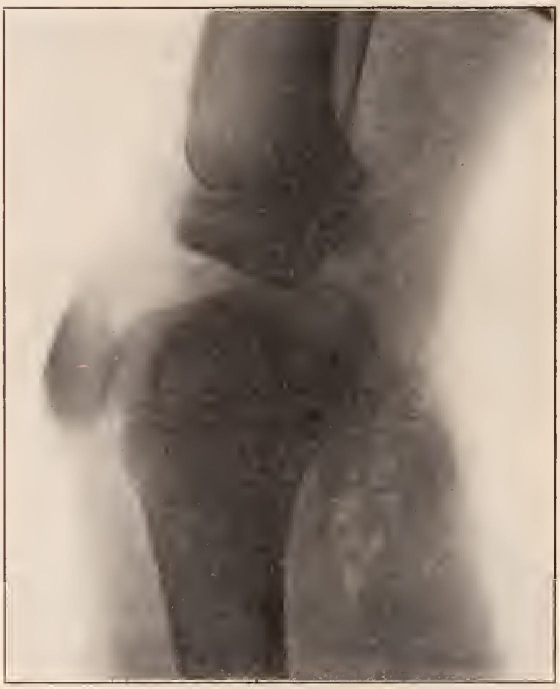

Figure 1

On account of the virulence of the infection this disease must be recognized early if we hope to save the life of the patient, or better, save the infected part. For this reason we must resort to all available methods to make an early diagnosis.

The aids to diagnosis are: the history, the

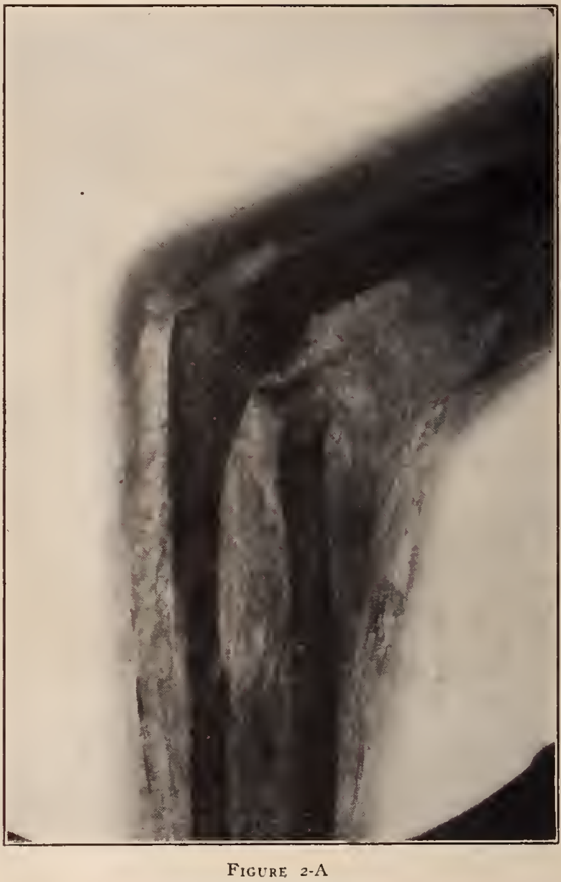

Figure 2-A

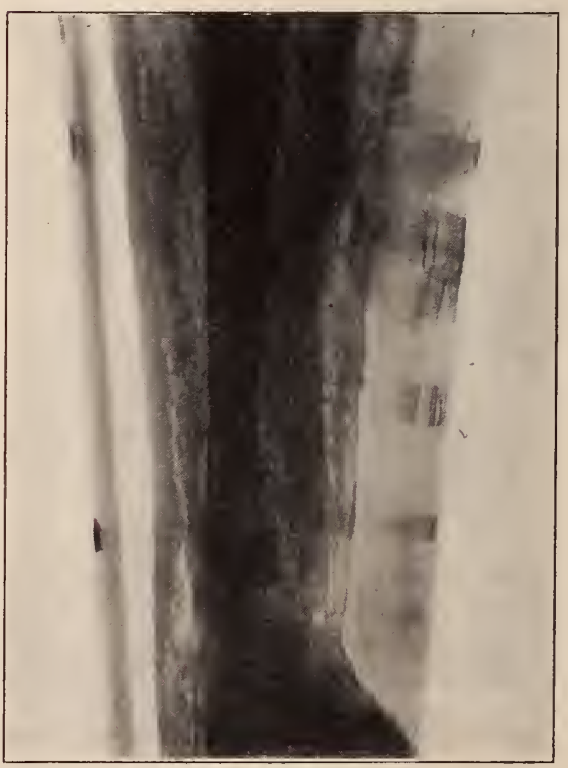

Figure 2-B

odor, which is very characteristic (in fact, so characteristic that a diagnosis may be made from this one symptom alone, in a far advanced case), the gas crepitation in the tissues, rise in temperature, subnormal temperature when in shock, rapid pulse, marked depression, rapid gangrene, finding the Bacilli Welchii by the microscopic examination of a smear, and the radiograph showing the gas.

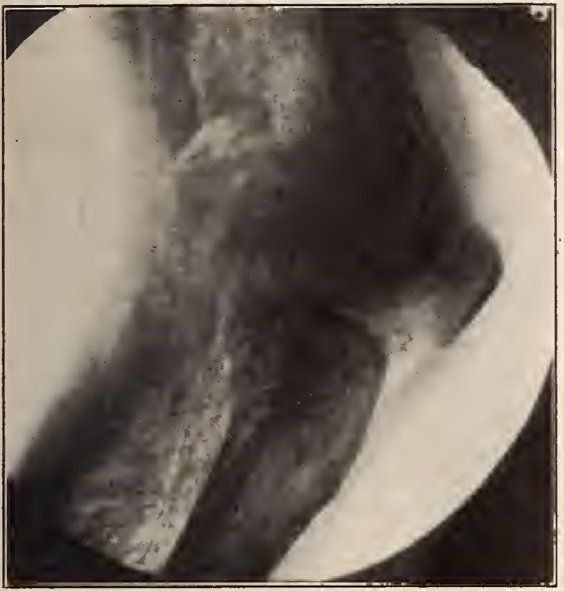

Figure 3-A

The x-ray is one of the most efficient means of diagnosis, as a very small amount of gas in the tissues can be detected early, probably hours before the odor becomes characteristic and before tissue crepitus can be detected. And in such a virulent condition a few hours may decide whether or not the life or the limb of the patient may be saved.

The earliest diagnosis that we made by x-ray findings was about twenty hours after the accident through which the infection occurred. However, at this time there was considerable gas in the tissues and the diagnosis could probably have been made some hours before.

Where the history and nature of the wound are favorable to the development of gas gangrene infection, an x-ray examination should be made every six or eight hours during the first few days, at any rate, if there is temperature, depression or rapid pulse. If this were always done, with our present effectual treatment, there should be no fatalities from this dreaded disease, as it seems reasonably certain that the radiograph would reveal the infection before any of the other typical symptoms are present.

Dr. Frederick Christopher of the U. S. Army, in writing from France says: "The roentgenologic examination is a helpful means of arriving at an early diagnosis in gas gangrene." He says that Morgan and Vilvandre, during routine examinations for pieces of metal or for fractures, have demonstrated the presence of gas that was entirely unsuspected until the x-ray revealed it.

He states that the x-ray appearance of gas is usually that of (1) bubbles in strings; (2) broad cast; (3) in a layer under the skin; (4) with cloud-like outline to the shadows; and (5) as a striation. He says that the bubbles are not necessarily circular, but may assume the shape of the cavities in which they are located.

He adds that among the causes of failure in making an x-ray diagnosis are the following: Ecchymosis; syringing the wound with hydrogen peroxide; shadows made by wounds; surgical emphysema; normal and abnormal structures (such as popliteal space, bursæ, hematomas, etc.) But repeated radiographs and the clinical symptoms would very soon eliminate the above conditions.

Donald Guthrie, in a paper on gas bacillus infection, refers to the value of the x-ray in detecting collections of gas in the muscle sheaths and fascia planes far remote from the site of the infection in wounds, these collections having been overlooked at the time of operation.

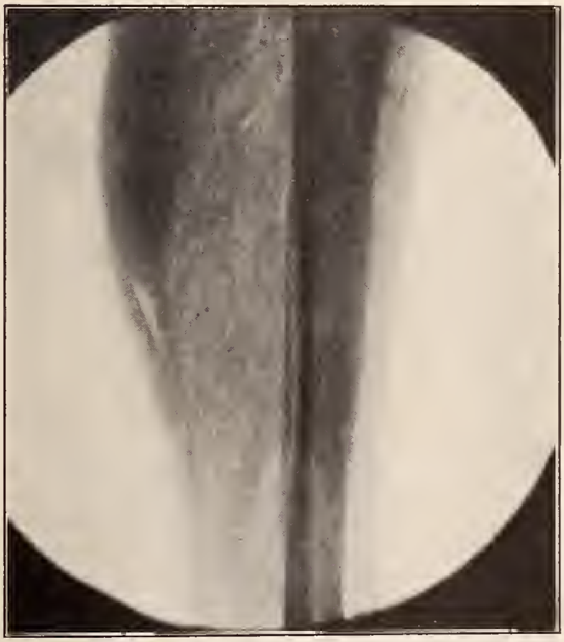

Figure 3-B

From the few cases I have seen, it appears that the gas bacillus invades (1) muscle, (2) subcutaneous tissues and (3) the skin.

Figure 1 shows a case in which air had gained access to the tissues through a bullet wound.

Short histories of the cases which we were able to study by radiograph follow:

Case 1: E. K., was shot with a 22 calibre bullet which passed directly through the knee. An x-ray examination was made to determine whether there was any bone injury or whether chips of the bullet remained along the course of the wound. The radiograph revealed no bony injury but showed a collection of air bubbles posterior to the lower third of the femur. As there were no other symptoms of gas bacillus infection, it was apparent that this air had entered through the bullet wound. We however, directed that another x-ray examination be made in case fever, subnormal temperature, rapid pulse or depression developed. None of these symptoms, however, appeared.

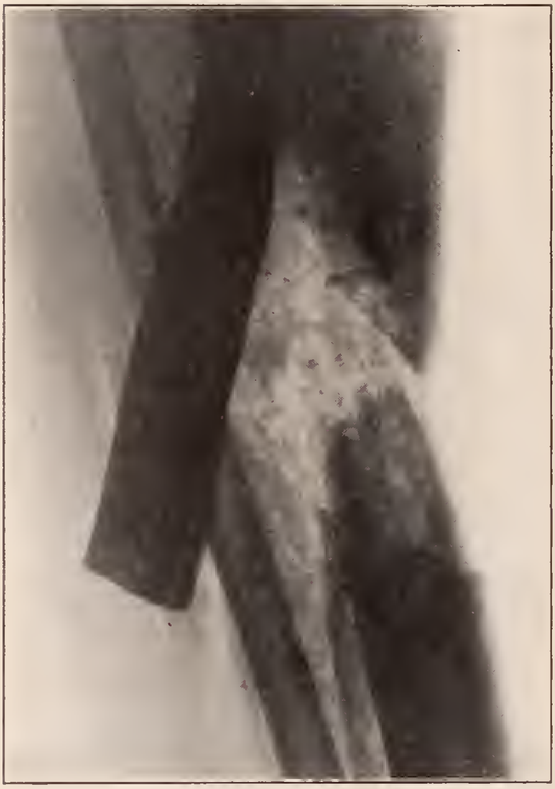

Figure 4-A

Case 2: W. P., a girl, seven years of age, spending her vacation in a small country town. On June 26, 1922, while playing near an out-toilet and stable, fell upon some railroad ties, injuring the left arm and elbow. A small piece of glass caused a laceration of the forearm about three-fourths of an inch in length and rather superficial, but bleeding freely.

A local physician treated the wound antiseptically, reduced a fracture and advised an x-ray examination to determine the position of the fragments. She consulted her city physician on the evening of June 27th. He noticed some swelling but not more than would be ordinarily expected.

She was referred to me for an x-ray examination and presented herself at my office on the morning of June 28th. The portion of the hand not covered with bandages was very much swollen, discolored, cold and clammy (radial pulsation was not detected, showing obliteration of the circulation, due to the air pressure in the tissues.) Several large blisters were noted, which discharged a very offensive, brownish fluid. The arm, above the bandags, was also swollen and appeared mottled, but was warm. Her face was flushed and she was very much depressed.

The radiograph (Figure 2-A) shows several fractures near the elbow, but what impressed me most was the mottled appearance of the soft tissues of the entire forearm, hand and finger, (Figure 2-B) also the lower portion of the arm—In fact, as far as the radiograph was taken. In the lower portion of the arm only the muscle was involved, due to the invasion of these tissues by gas. A diagnosis of gas gangrene was made and the child at once sent to a hospital where the arm was freely incised (gas escaping with an audible sound) and tetanus perfringens antitoxin administered. The life of the child was saved but she lost her arm a few inches below the shoulder joint.

Case 3: Mr. J. F. R., aged 52, farmer. On the morning of July 15, 1922, while spreading manure with a manure spreader, the machine struck him below the right knee and pinched him in the popliteal space, causing several lacerations. He called his physician, who treated the wounds antiseptically. The following morning his leg was cold, clammy and discolored. He again called his physician, who referred him to a hospital. When admitted on July 16 at 11:55 p. m., he was in a state of profound shock. The skin was cold and clammy, temperature 96.2, pulse rate 100, weak and rapid. He was semi-delirious, but responded to questions. His leg was gangrenous from the knee down, cold, without sensation and had a very offensive odor. His thigh and lower abdomen were red and swollen, but neither his leg nor thigh showed crepitation. An x-ray examination (Figures 3-A and 3-B) was made on the morning of July 17, and showed a

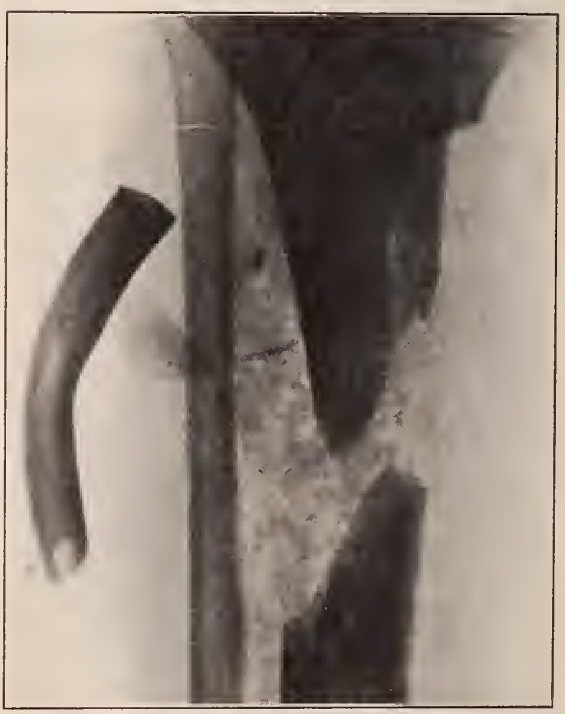

Figure 4-B

great deal of gas in the tissues of the leg and thigh. Antitoxin was administered at once but the patient died shortly after the administration.

Case 4: Mr. W. A., colored, aged 23. About 1:30 p. m., on August 16, 1922, in an automobile accident, the patient received a compound, comminuted fracture of the upper third of the left tibia, the bone protruding. He was admitted to the hospital at once and was operated upon about one hour later, at which time some of the loose pieces of bone were removed, the fracture reduced and the wound treated antiseptically. At midnight his temperature was 99.4; at 4 a. m., August 17, 100; at 8 a. m., 101; at 4 p. m., 102.3; and at 8 p. m., 103.2, his pulse varying between 120 and 160. At 8 a. m., August 17, the patient complained of the bandages feeling too tight. His toes were cold, discolored and without sensation. He had little or no pain. An x-ray examination (Figures 4-A and 4-B) was made about 10 a. m., August 17, or about twenty hours after the accident, at which time there was considerable gas formation about the site of the fracture, although there was no crepitus, no odor and no gangrene. Gas bacillus infection was diagnosed. Antitoxin was administered. The leg, after becoming gangrenous, was amputated above the knee and the patient made an uneventful recovery.

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THE PROSPECTS OF A MEDICAL CAREER*

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In the opening scene of Marchin and Guernon's play, entitled, "The Eyes of Youth," the heroine is beset with doubt as to which of two suitors to choose for a husband. While in this quandry, a magician from the East shows her a crystal ball into which those who gaze may see their fate spun out before them. Thus gazing, with the one she foresees a life of misery, and with the other, a lifetime of happiness, and her problem is solved. As we approach a new era in our lives, how much more confidently we might proceed could we but see what lies in store for us!

Some of you to-night stand at the threshold of your medical career; others are about to pass through its portals—and I may perhaps rightly conclude that you are all curious as to what the future holds. Indeed, it would not be strange if you should long to do a little crystal gazing for yourselves, in order to satisfy that inborn desire of the human heart to see into the future—the ever-present problem that holds our interest and serves to make us "carry on."

In choosing medicine, you have selected one of the oldest of the professions. It is, in truth, "as old as the hills." We cannot trace its origin beyond a certain point, but we know that the care of the sick and the healing of wounds were practiced for many centuries before Christ. Osler says:

> "Medicine arose out of the primal sympathy of man with man; out of the desire to help those in sorrow, need, and sickness." He believes that Celsus was probably correct in his assumption of the origin of rational medicine: "Some of the sick, on account of their eagerness, took food on the first day; some, on account of loathing, abstained; and the disease in those who refrained was more relieved. Some ate during a fever, some a little before it, others after it had subsided, and those who had waited to the end did best. For the same reason some at the beginning of an illness used a full diet, others a spare, and the former were made worse. Occurring daily, such things impressed careful men, who noted what had best helped the sick, then began to prescribe them. In this way medicine had its rise from the experience of the recovery of some, of the death of others, distinguishing the hurtful from the salutary things."

The earliest recorded physician, dating back some sixty centuries, was Imhotep, an Egpytian, of whom Breasted says:

> "In priestly wisdom, in magic, in the formulation of wise proverbs, in medicine, architecture, this remarkable figure of Zosers' reign left so notable a reputation that his name was never forgotten, and 2.500 years after his death he had become a God of Medicine in whom the Greeks, who called him Imouthes, recognized their own Æsculapius."

Before the Grecian period of medicine there are evidences also of the existence of Assyrian, Babylonian, Hebrew, Chinese, and Japanese healers. But it remained for Greece to give us the first clear accounts of these healers, and whereas the physician of the primitive races was evolved from the priests, in Greece he developed from both the priests and the philosophers.

At the dedication of the new buildings of the Washington University Medical School at St. Louis in 1915, George Edgar Vincent, then President of the University of Minnesota, drew a fanciful analogy between that dedication and the opening of the new pavilion of the hieron of Æsculapius at Epidaurus in Argolis, on the Gulf of Ægina, about the third century B. C. There, too, was a group of hospital buildings—ward and administration; there also were an animal house, a gymnasium and baths, as well as a theater seating 20,000 persons, and a stadium *600 feet* long and seating *12,000*. "The resident staff of physicians was on a full-time basis; the fees went to the hospital." He twitted his audience, which, of course, was proud of its new university buildings, by saying that evidently they were helplessly behind the times of Greece, and he jocularly extended his sympathy. Later he admitted how absurd it was "to try to conceal beneath superficial likenesses, differences so essential and profound" as there are between the medicine of the days of Greece and of the present day. *Then* there was a mythical leader and the practice of the art was founded on tradition. The priests of medicine and surgery were "promoters of superstition, and incidentally and empirically they hit upon fragmentary truths." *Now,* no leader is born who does not survive the careful scrutiny of his fellows; empirical practice has fallen into disrepute except in those cases in which it is explained and supported by scientific facts; and the medical profession is united in a search for truth wherever it may be found.

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*Address delivered before the student body of Jefferson Medical College, at the opening of the ninety-eighth session, September 25, 1922.

How many names might be recalled of those who, by a life of devotion, have contributed to the progress of medicine! With the most notable workers and with the gifts they gave to the science, you should be familiar.

The legendary Greek god of medicine, Æsculapius, is known as the father of medicine, and "for more than a thousand years—he has been the consoler and healer of the sons of men." (Osler.) Hippocrates, another Greek, who was born about 460 B. C., was the originator of the Hippocratic oath, which for 25 centuries has been the creed of the profession, and in many universities is "still the formula with which men are admitted to the doctorate." Aristotle, the greatest of the Greek philosophers, was born B. C. 384; of him Osler says, "the history of the human mind offers no parallel in his career." Galen, also Greek, born about 130 A. D., was the first anatomist and physiologist. Paracelsus, a German, born in 1493, and called the "Luther of Medicine, the incarnation of the spirit of revolt," upset many of the faulty theories of his day.

Vesalius, a Belgian, of the sixteenth century, the creator of the modern method of teaching anatomy, instituted dissection of human and animal subjects. Harvey (English, 1578), discovered the circulation of the blood. Morgagni (Italian, 1682), was the pioneer in the study of morbid anatomy. Sydenham (English, 1624), called the English Hippocrates, first taught the doctrine of nature's tendency to cure. Boerhaave (Dutch, 1668) was famous as a teacher, and was called the Dutch Hippocrates. John Hunter (English, 1728), who gave immense impetus to the study of morbid anatomy, inoculated himself with syphilis in order to substantiate the position he had taken in the dispute as to whether syphilis and gonorrhea were identical.

Jenner (English, 1749) was the discoverer of vaccination, which has practically eliminated smallpox. Corvisart (France, 1800) was the pioneer in clinical teaching. Auenbrugger (an Austrian) in 1761, invented the art of percussion as a diagnostic aid. Bichát (France, 1771) by his work gave great impetus to the study of scientific medicine. Laennec (a Breton by birth) discovered auscultation in 1819 and invented the stethoscope. Liebig (Germany, 1803), the chemist, who opened his laboratory in 1825, fostered advances in chemistry during the nineteenth century, "the importance of which can scarcely be over-estimated." Virchow (German, 1821), the originator of cellular pathology, drew attention to the cells, the component parts of the tissues, as being the seat of disease. Morton (American, 1846) discovered ether.

Pasteur (France, 1865), the first bacteriologist, was the originator of the germ theory of disease. Koch (German), who elaborated Pasteur's observations, discovered the tubercle bacillus in 1882. He first isolated germs outside the body, and then, by inoculation, reproduced the disease in animals. Joseph Lister (Scotch, 1867) inaugurated the antiseptic era of surgery. Ephraim McDowell (American, 1771-1830) was the first ovariotomist and the founder of abdominal surgery. Bernard (France, 1813) and Addison (England, 1793) in 1855, laid the foundation for the study of the ductless glands. Schaudinn (German, 1871-1906) in 1905 isolated the spirocheta pallida, the pathogenic organism of syphilis. Ehrlich (German, 1854-1915), who gave the world his epoch-making views on immunity, in 1910 produced salvarsan ("606") and neosalvarsan, the intravenous specifics for the treatment of lues.

As one reviews the achievements in the medical art, none is perhaps more striking than the results of sanitation.

For centuries malarial fever was a world-wide scourge. It is said that the physical degeneration of the Greek and the Roman races in the latter days of these empires was, in part at least, due to malarial infection. The specific action of quinin and of other derivatives of cinchona bark was learned by accident in 1638, and was for a time spoken of as the Countess's secret, referring to the Countess of Chinchon, who was cured by the remedy. In 1880 Laveran discovered the protozoa of malaria, and in 1898, Sir Donald Ross demonstrated that the disease was transmitted by the bites of certain varieties of mosquitoes (Anopheles). In one district of India, during the last four months of 1908, one-fourth of the total population suffered from malarial fever, with 400,000 deaths, nearly all attributable to this infection.

Yellow fever was another scourge that sanitation helped to conquer. In an epidemic here in Philadelphia in 1793, 10,000 deaths from this disease occurred within three months. The death rate from yellow fever among the British soldiers and sailors in the West Indies was appalling. For the twenty years ending 1836, the average death rate was 101 per thousand.

The theory that the yellow fever parasite was transmitted by the mosquito was first promulgated by Carlos John Finlay of Havana, an alumnus of this college, class of 1865. His findings were confirmed by the work of Walter Reed and his associates, among whom was the martyr and hero, Dr. Jesse W. Lazear, who allowed himself to be bitten by the mosquito (Stegomyia fasciata) and died from the disease.

The greatest feat ever achieved as the direct result of sanitary regulations was the building of the Panama Canal. Proposed as early as 1551, in a memorial submitted by de Gomara, the Spanish historian, to Philip II of Spain, the project was soon abandoned, and "the plague-stricken isthmus was left to the negroes and half-breeds."

In 1849 the gold rush to California made the construction of a railroad across the Isthmus of Panama necessary. This was completed in 1855, and it is said that "every tie cost a human life."

In January, 1881, Ferdinand DeLesseps attempted to bring to realization the dream of navigators and practical engineers. "The story of the French Canal Company," says Osler, "is a tragedy unparalleled in the history of finance, and one may add in the ravages of tropical disease." Yellow fever, malaria, dysentery, typhus, all exacted a frightful toll, the death rate reaching 176.97 per thousand of the working people.

In 1907, the construction of the canal was again undertaken at the instigation of Theodore Roosevelt, and thanks to the progress of medicine during the previous two decades, the work was completed—an achievement that would have been impossible but for the hygienic and sanitary regulations instituted in the Canal Zone by the medical director, Dr. W. C. Gorgas. Through his wise counsel and inflexible regulations tropical diseases diminished, and the death rate was reduced from 8.49 per thousand in 1906 to 0.11 per thousand in 1918.

How few cases of typhoid fever there are now! Not quite so many, perhaps, as your teachers of medicine would care to have, for clinical purposes; and yet time was when every year had its epidemic. This scarcity of cases is the result of water filtration and of the avoidance of pollution of the water supply.

How long, during the late war, would the armies of the world have remained in the field, if inoculation against typhoid fever had not been nearly universal?

What an arrest in the spread of the great white plague (tuberculosis) was affected by the education of the layman and the application of a few simple rules of hygiene, all founded upon the truths revealed by medical science!

Not only in medicine, but in the general progress of the world and in other fields of endeavor, members of our profession have taken a place and have achieved fame. Relative to this fact, Daniel Weaver has collected some interesting data.

Otto Brunfels, a physician of Berne, is really the father of the botanical sciences. Benjamin Barton, a Philadelphia physician, and Jacob Bigelow, a Boston practitioner, acquired a world-wide reputation as botanists before Americans "attracted much attention in literary fields."

Dr. Theodor Schwann was the founder of biology. John and William Hunter, of England, leading physicians of their day, were also eminent naturalists. Joseph Leidy, of Philadelphia, was the pioneer zoölogist. Lothar Meyer, of Germany, and John Berzelius, of Sweden, made important advances in chemistry. Sir Thomas Browne wrote "Religio Medici," which has been read attentively for nearly three centuries; it was this book, it is said, that made Osler decide to study medicine.

Oliver Wendell Holmes and S. Weir Mitchell, whose writings have delighted the world, were both famous as physicians. Holmes was Professor of Anatomy at Harvard, whereas Mitchell was one of the leading neurologists of his time. Holmes' poetic outburst, "Old Ironsides," saved the frigate "Constitution" from destruction for many years, and his writings, notably the breakfast table series, reveal "humor of indescribable and rarely equalled delicacy and brilliancy." Mitchell, in his book, "Hugh Wynne," Quaker, has charmingly portrayed Continental Philadelphia, and inculcated in us the desire to be true Americans. Dr. John Brown wrote "Rab and His Friends," a book that has provided healthful entertainment for many a school boy.

Dr. Wilfred T. Grenfell was an heroic missionary to the scattered people along the coast of Labrador—two hundred and fifty thousand of them, chiefly fisherfolk and fur traders, spread over several thousand miles of seacoast. In that land the rivers are few, the trees are sparse or absent, and the agricultural resources are practically nil. The summers are short and the winters long—30 feet of snow covering the earth. The natives live on a restricted diet, their dwellings are unhygienic, and tuberculosis is pitifully common. For these people Grenfell provided missions, hospitals and facilities for education. His work stands unrivalled.

Dr. David Livingston (Scotland, 1813) first penetrated the interior of darkest Africa. Originally a medical missionary, he later became an explorer. "In the annals of exploration of the Dark Continent," wrote Stanley, "we look in vain among other nationalities for a name such as Livingston's. He stands preëminent above all." Britain excelled herself even when she produced the strong and perseverant Scotchman. "His example acted like an inspiration, filling Africa with an army of explorers and missionaries, and raising in Europe so powerful a feeling against the slave trade, that through him it may be considered as having received its death blow." (Encyclopedia Britannica).

Benjamin Rush of Philadelphia, Josiah Bartlett of New Hampshire, Lyman Hall of Georgia, and Oliver Wolcott of Connecticut, were all signers of the Declaration of Independence, and the last three named were governors of their respective states. All were members of the medical profession.

The personal service rendered by medical men in the World War was more than notable. Of the Victoria Crosses awarded by the British, one of the first went to a surgeon who remained at his post dressing soldiers returning from the field of battle after he himself had been mortally wounded.

Gentlemen, you have chosen an honorable profession. When reduced to ultimate principles, can there be one of greater importance? Can anything be more gratifying to the donor—call forth more freely the thanks of those to whom it is extended—than bestowing relief on the suffering? Christ himself was called the "Great Physician." Does anything excel in beneficence the mitigation of distress to the pain-racked sufferer? Can a man spend his life more worthily than in such a cause? It may be questioned who has the loftiest purpose and the highest achievement—the clergyman, the lawyer or the doctor?

Far be it from me to underrate the services of the clergyman. He is our spiritual caretaker, and the advocate of religion, which, after all, is the backbone and sinew of the nation; and I acknowledge freely the sanctity of the law and the high code of ethics that prevails among the best of its exponents and administrators. But who will not concede that the doctor has more intimate knowledge of his patient than the clergyman can have of his parishioner or the lawyer of his client? To whom must more perilous secrets be confided; to whom is it given more frequently to keep the family skeleton safely locked in the closet? Listen to Robert Louis Stevenson's estimate of the physician:

"There are men and classes of men that stand above the common herd; the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarer still, the clergyman; the physician almost as a rule. He is the flower, such as it is, of our civilization; and when that stage of man is done with and remembered only to be marveled at in history, he will be thought to have shared as little as any in the defects of the period and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments, and, what are more important, Herculean cheerfulness and courage. So it is that he brings air and cheer into the sick room, and often enough, though not so often as he wishes, brings healing."

You have chosen rightly in coming to the Jefferson Medical College for your preparation for this honorable calling. Here there is everything to inspire you. You may glory in her traditions, and in after years may your affection for her be like that which Daniel Webster had for Dartmouth, his alma mater, when he said, "She is a small college, but there are those who love her dearly."

The Jefferson Medical College was founded in 1824, through the initiative of Dr. George McClellan. Since that day many men who have attained national or world-wide fame have been numbered among its faculty and alumni. Let us recall a few of them:

There were Thomas D. Mütter and Joseph Pancoast. The former possessed extraordinary ability as a teacher. "He was eloquent, polished, and much beloved by his classes." His memory is perpetuated in Philadelphia by the Mütter Museum and the Mütter lecture course at the College of Physicians. He was equally successful both as a clinical lecturer and as an operator. "The surgical clinic, by the associated zeal and efficiency of Mütter and Pancoast, became so famous that the amphitheatre was crowded with practitioners from all parts of the country." (Holland.)

Samuel D. Gross, or, as he is called, the "elder Gross," was famous as a writer for his "eloquence and lucidity"; as an operator, "for his skill," and as an individual for his "imposing presence." His library, consisting of about 8,000 volumes, now reposes at the College of Physicians. Others are: John Kearsley Mitchell, first advocate of the view that malarial fever, yellow fever and cholera were caused by bacterial infection; Charles D. Meigs, famous as a scholar, eloquent lecturer and writer on obstetrical subjects; Franklin Bache, coworker with Wood in the preparation of the first pharmacopeia; Robley Dunglison, a "rare combination of splendid culture and vast erudition"; Roberts Bartholow, army surgeon, physiologist, sanitary reformer, writer and physician—a therapeutist whose avowed aim was "to stem the tide of therapeutic nihilism"; Theophilus Parvin, the professor of obstetrics and diseases of women in 1883; Samuel W. Gross, called the "younger Gross"; Jacob M. Da Costa, the "physicians' physician" (professor of medicine in 1872), noted for his diagnostic accuracy, skill in the use of remedies, his wide and well-ordered knowledge of medicine and his still greater knowledge of men. (Kelly and Burrage.) Did time permit, many others might be mentioned of whom Jefferson is justly proud.

The old amphitheatre that has just been demolished was completed and opened for use May 1, 1877. For 44 years it was in daily use. The memory of many Jefferson men will hark back to it. Of this amphitheatre the former dean of the College, James W. Holland, wrote: "The amphitheatre of the Jefferson Hospital became renowned for the extent and quality of the clinical teaching which it afforded. It was the arena in which operated such surgeons of imperishable fame as the Grosses and the elder Pancoast. There, the illustrious J. M. DaCosta taught and the erudite Bartholow lectured. There spoke Levis, Parvin, Wallace, Biddle, Brinton, Maury, and others. There as guests have stood Esmarch of Kiel, Mikulics of Breslau, Faure of Paris, Lorenz of Vienna, Bryant, Durham, Horsley, Balance and MacCormack of London, Macewen of Glasgow, Lawson Tait of Birmingham, Annandale and Cheyne of Edinburgh, Emmett, Weir and Thomas of New York, Senn of Chicago, our own Marion Sims, and a host of others." On the site of the old building the new will rise, and let us resolve that the fame of the old amphitheatre at Jefferson may be renewed in the one now in course of construction.

There are many problems in the science of medicine that are yet to be solved. A teaching institution such as this should not only give its students a practical and working knowledge of the theory and practice of medicine as its exists to-day, but should also, by precept and by the example of its faculty and teaching staff, inculcate in the entire student body the spirit of scientific observation and investigation. We dare not rest content with present knowledge; we must learn more. We must strive to foster this spirit, else we stagnate and decay.

Probably in no branch of medicine more than in physiologic chemistry are there greater potentialities for discovery that will increase our value as physicians. Of the possibilities of the röntgen-ray for diagnosis and treatment, it may be said that the surface "has not yet been scratched." It is confidently believed that in the gamma-rays of the Röntgen tube and in radium lies the hope for the cure of malignant disease. Nothing positive is known at present, for methods must be improved and further observations are imperative. How valuable an aid it will be when we can measure deficiencies in the secretion of the ductless glands or recognize accurately the relative disordered functioning of associated glands! What would not the obstetrician give to understand positively the pathology of the toxemias of pregnancy!

During the next decade great changes will take place in the relationship between medicine and the state. Already the civic and the state departments of health are recognized as of the greatest importance. Some day there will be a National Secretary of Health. State appropriations for the maintenance of hospitals will undergo changes and economic readjustment will be made, so that every sick person, regardless of his circumstances, will receive the best medical attention, for which he will be liable according to his ability to pay. What a prospect!

Does it not stir you to realize that you have a chance to play a part in the solution of these problems?

And now what about yourselves and your own medical careers? It is not disconcerting to say that some of you will be failures, nor is it flattering to predict that many of you will be successful. There are some in this audience who will be leaders of their profession, whose names will be writ high on the school of achievement. Your future depends largely upon your own efforts, for though men are by no means created equal, like genius, success is dependent on the capacity for work—not work unqualified—not blind and useless toil, but intelligent and well-directed endeavor. You must instill in yourself the desire to become successful, and then leave no stone unturned to accomplish your end fairly and squarely. Consider the words of Addison:

"'Tis not in mortals to command success
But we'll do more, Sempronius—we'll deserve it."

What other factors are essential to success? Does success depend on opportunity or on the intelligence and the will to grasp the opportunity when it presents itself? "The golden opportunity is never offered twice; seize then the hour when fortune smiles and duty points the way; nor shrink aside to 'scape the spectre fear—nor pause though pleasure beckon from her bower; but bravely bear thee onward to the goal."

Alexandre Dumas, in his novel "The First Republic," pictures Napoleon, an obscure artillery captain, alone in his shabby quarters in Paris at night. He is sought out by Barras, who offers him supreme command of the convention forces in the battle that is expected to take place on the morrow. He exclaims, when the full realization of the opportunity comes upon him, "O Fortune, Fortune, do I grasp thee?" The following day, the 13th Vendémiaire, opened up his astounding career. But was this luck? Had he not, by previous exploits, marked his way with Barras; and would he confidently have been enabled to accept the offer if he had not felt qualified by his previous work and experience? Hear what Sir Walter Scott says of chance:

"Chance will not do the work. Chance sends the breeze;
But if the pilot slumber at the helm, the very wind that wafts us toward the port
May dash us on the shelves.
The steersman's part is vigilance,
Blow it or rough or smooth."

Prepare yourselves, therefore, so that when your opportunity comes, you will be ready to grasp it. Do not wait for "something to turn up." Strive to impress on yourself the belief that there is no such thing as destiny. Perhaps you have read the striking story of O. Henry, "Roads of Destiny." In this tale a young artist quarrels with his sweetheart and leaves his home by the road to Paris. He comes to a crossroads, and hesitates as to which road he should take, the one on the right or on the left. To show that it made no difference what his decision was, the author relates what befell him on taking the right-hand turn, and then on taking the left-hand turn, and then upon retracing his steps when he decides to go back home. In each case, but by a totally different course of events, he is killed by a bullet from the selfsame pistol of a certain nobleman. It made no difference which way he went, he *had*, alas! to die! This is merely a clever story; it may please us and we may admire the author, but it should not be taken seriously. We dare not be indifferent to our daily tasks; we must not believe that our fortunes are predestined. Such a belief would be fatal. "Everyone is the architect of his own fortune."

In the first two years of your course much of your time will be devoted to subjects that are not intimately connected with the practice of medicine; many of these you will forget, at least in part, before your course is completed. The subjects may seem to be irrelevant, and you may think the time expended on them wasted. But remember that your teachers have given much thought to formulating the curriculum and have included nothing that is unessential. Apropos of this very point Oliver Wendell Holmes says:

> "Yet pause a moment before you infer that your teachers must have been in fault when they furnished you with mental stores not directly convertible to practical purposes, and likely in a few years to lose their place in your memory. All systematic knowledge involves much that is not practical, yet it is the only kind of knowledge which satisfies the mind, and systematic study proves, in the long run, the easiest way of acquiring and retaining facts which are practical. There are many things which we can afford to forget which yet it was well to learn. Your mental condition is not the same as if you had never known what you now try in vain to recall. There is perpetual metempsychosis of thought and the knowledge of to-day finds a soil in the forgotten facts of yesterday."

In conclusion, let me advise you to be industrious. Do not fail to play in playtime, and put all your heart into your play; but be sure that your working hours have been so employed that something has been accomplished, something done. In the words of Roosevelt, "Hit the line hard." Lose no opportunities, and never regard anything associated with your study here or with your work later as a trifle.

In his autobiography, Andrew Carnegie recalls the fact that when he was offered his first "real job" in this country his prospective employer asked him when he would be ready to come to work. His answer created surprise when he said that he was ready *then* and that he would stay right on and work. He did this because he wanted to be sure of the position, and he figured correctly that if he delayed, something might occur that would deprive him of the coveted chance. He says: "On such 'trifles' do the most momentous consequences hang. A word, a look, an accent, may affect the end not only of individuals, but of nations. He is a bold man who calls anything a trifle."

Do you recall what was flashed back when the British admiralty inquired by wireless of our destroyer fleet on its way across the Atlantic, "How soon after arrival will you be ready for active service?" The answer was simple but impressive. Did they say they would be ready in two days or in two weeks after arrival? No! They said "*On* arrival." They were ready any time—all the time!

Be courageous! You will have many discouragements. Remember the outstanding hero of the late war, Ferdinand Foch. He had always held it as an axiom that "A battle won is a battle in which one is not able to believe one's self vanquished." He would never give up. Finally his opportunity arrived, and at the battle of the Marne he turned disaster into victory and by the very boldness of his action threw the adversary into confusion and dismay. His telegram to headquarters read—mark you the courage and the faith of the man—"My center gives way; my right recedes; the situation is excellent; I shall attack!"

Seek to acquire nobility of character. Do right, as Abraham Lincoln said, "as God gives you to see the right." Socrates, who taught the youth of Athens, was fond of repeating the words of Solon, *"Knothi Kairon"* ("Know thyself"). Andrew Carnegie held as his rule of conduct the lines of Robert Burns: "Thine own reproach alone do fear."

What better advice can I leave with you in parting than the words from Shakespeare, found in

Polonius' Advice to His Son

Give thy thoughts no tongue,
Nor any unproportioned thought his act.
Be thou familiar, but by no means vulgar.
The friends thou hast, and their adoption tried,
Grapple them to thy soul with hooks of steel;
But do not dull thy palm with entertainment
Of each new-hatched, unfledgéd comrade. Beware
Of entrance to a quarrel; but, being in,
Bear it, that the opposer may beware of thee.
Give every man thine ear, but few thy voice:
Take each man's censure, but reserve thy judgment.
Costly thy habit as thy purse can buy,
But not expressed in fancy; rich, not gaudy;
For the apparel oft proclaims the man;
And they in France, of the best rank and station,
Are most select and generous, chief in that.
Neither a borrower nor a lender be:
For loan oft loses both itself and friend;
And borrowing dulls the edge of husbandry.
This above all—to thine own self be true;
And it must follow, as the night the day,
Thou canst not then be false to any man.
Farewell; my blessing season this in thee.

THE SCHICK TEST*

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Whether it be because of some inherent characteristic of the bacillus or because of the personality of the investigators who have made it a study, is not the province of this paper but the fact remains that among all the pathogenic microörganisms constituting the science of bacteriology none is more fully understood than the diphtheria bacillus. Since 1821 the disease has borne the name given to it by Bretonneau of Tours, in his classical description, and has been recognized as a clinical entity. The combined work of Klebs and Loeffler gave us the first knowledge in the sense of modern bacteriology. In 1890 von Behring discovered antitoxin, and since 1891 the use of this principle has become more and more established in medicine—so much so that to-day of all the remedies used in the treatment of diphtheria prior to the discovery of antitoxin, not one is of any, save historical, significance. The reduction of mortality from diphtheria since the general use of antitoxin in the early stages of the disease has been so striking that antitoxin is classified as one of the most valuable specifics we possess. The use of antitoxin, however, is largely therapeutic; the immunity conferred is of too short duration to prove of any except transient value. Moreover, in its use as an immunizing agent no discrimination is made between those who are susceptible and those who are naturally immune to the disease. But the reproach that the innocent must suffer with the potentially guilty, when using antitoxin as an immunizing agent, has been removed by the introduction of the Schick test, whereby the susceptibility of an individual to diphtheria may be easily and absolutely determined.

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*Read before the Scientific Meeting of the Allegheny County Medical Society, Pittsburgh, Pa.

The result of the Schick test is the individual's reaction to a minute quantity of diphtheria toxin—properly diluted—injected preferably into the skin of the forearm. Contrary to what is generally believed, the test is not difficult, although this point is rarely emphasized. This is not by any means to be interpreted as a statement that definite technic is not essential.

Results, to be trustworthy, depend upon three—at least three—factors:

1. The material used must be of standard strength.
2. The method of injection must be correct.
3. The interpretation of the result must be accurate.

The Material Used Must Be of Standard Strength.—The solution injected must be sufficiently powerful to produce a positive reaction in a person not naturally immune to diphtheria. On the other hand it must not be so concentrated as to produce sloughing at the point of injection. One one-fiftieth of the minimal amount necessary to kill a guinea pig is the quantity injected. Schick prefers this in 0.1 c.cm. of normal saline solution, while Zingher, at whose clinic I had both the pleasure and honor of being a visitor last November, uses 0.2 c.cm. of normal saline as a diluent. The larger amount of fluid obviously produces a more definite wheal and is more easily manipulated. Complete outfits for carrying out the test may be had from many of the reliable commercial laboratories. In our work we used the material supplied by the H. K. Mulford Company. The outfit consists of a small glass capillary tube containing the toxin, a small rubber bulb for expelling the toxin from the tube and a glass bottle containing normal saline solution sufficient to make the correct dilution when mixed with the toxin. A second bottle contains the toxin control solution. The test is absolutely harmless.

The Method of Injection Must Be Correct.—One point cannot be too strongly insisted upon. The injection must be made, not hypodermically, but intradermically. The solution is injected not into the deep tissues but into the skin itself. The reaction depends upon the local irritant effect of either the diluted toxin, the autolyzed protein of the diphtheria bacillus or both. Reliable syringes and fine needles are indispensable to good work. We have found the Schick test outfit made by the MacGregor Instrument Company to meet with every requirement. It consists of two 1.0 c. cm. glass syringes (both graduated to one-tenth of a c. cm.) and two 26-gauge, ¼-inch needles. One of these syringes is used exclusively for the diluted toxin and the other for the control, which is diluted toxin previously heated to 75 C. for ten minutes. Syringes and needles must be sterilized—either by boiling or with alcohol—in the latter event the syringes and needles must be thoroughly rinsed with some of the diluted toxin and the rinsings discarded. It is good practice to have an arbitrarily selected point—say the flexor surface of the right forearm for the injection of the toxin, and a similar point on the left forearm for the injection of the control. Much time and confusion in the interpretation of the results is thereby eliminated.

The Interpretation of the Results Must Be Accurate.—The readings of the results of the injections into the forearms may be divided into four groups: positive, negative, pseudo-positive and pseudo-negative. A positive reaction, indicating that the individual is susceptible to diphtheria, manifests itself by a well defined area of redness about the site of injection on the right forearm only; the left forearm is free of any discoloration. This begins to make its appearance within 24 to 36 hours and does not reach its height until the lapse of four or five days. The reaction persists for a week or even longer, gradually fading with time. A negative reaction, indicating that the individual is naturally immune to diphtheria, evidences itself by the absence of any reaction of any kind at the point of injection on either the right or left forearm. The fact that some persons are unusually susceptible to the autolyzed protein on the diphtheria bacillus is responsible for the pseudo-reactions. All pseudo-reactions make their appearance earlier than the true reactions; they fade with comparative rapidity and generally amount to but a slight discoloration by the time the genuine reactions have reached their height. The pseudo-negative reaction shows equal redness and induration on both the right and left forearms. The pseudo-positive reaction, or as it is so often called "combined reaction," is as the name implies, a combination of the positive and pseudo elements. The pseudo element, however, fades more quickly than the positive and one can, as a rule, avoid confusion by allowing time to cast the decisive vote.

To those who give either a positive or a pseudo-positive reaction we administer toxin-antitoxin—a mixture of the toxin of the diphtheria bacillus and antitoxin. Those susceptible to diphtheria are thereby rendered immune for a prolonged period. It has been proved by Park that such immunity is of at least four years' duration. In view of the fact that the natural immunity of an individual increases with his age, the importance of conferring such immunity upon younger children, at least, will be apparent, and perhaps the more appreciated when we recollect that of 129 deaths from diphtheria in the city of Pittsburgh during 1921, 79 such deaths were of children under seven years of age. There has been much written about the preparation of toxin-antitoxin, regarding the neutralization of the toxin by the exact amount of antitoxin necessary, etc.; all of which tends to confusion and gives foundation to statements that such treatment might lead to untoward effects. Discussion as to the proper mixture has nothing to do with carrying out the test, and while it is freely admitted that such information may be a source of pleasure to some engaged in general practice, for all practical purposes such knowledge is of no more value, has no more relevancy to the subject, than the knowledge of how to make 606 has to the treatment of syphilis. The toxin-antitoxin, or T. A., as it is called, is injected deep into tissues at intervals of seven days until three such injections have been given. Reactions following such injections, while not common, are not unusual. High fever, a quickened pulse and general prostration are then sometimes seen, but these generally subside within a few days and no other after-effects are found. The reaction following the first injection is generally the most severe. Those giving a combined reaction to the Schick test usually give the more severe reactions to the injections of T. A.

During the past several months I have been permitted to do the Schick test, together with subsequent injections of T. A. wherever necessary, on every boy in Thorn Hill School, a county institution to which boys from eight to eighteen years are committed by the Juvenile Court for minor offenses. The average population is about four hundred and fifty boys. Up to the present (June 15, 1922) we have Schicked 478 cases, of which 109 (22%) were positive. Of the 109 boys who were treated with T. A., three gave severe reactions — that is severe enough to confine them to bed for several days.

As to the value of the Schick test let me cite but one example. One of the boys was taken from Thorn Hill School to one of Pittsburgh's largest and best hospitals, because of a severe burn. He had never complained of any trouble with his throat, nor had there ever been any suspicion of his being a carrier. Routine examination gave, among other findings, a throat culture positive for the Klebs-Loeffler bacillus. As is the rule, this boy had given a negative result to the Schick test—for the test does not pretend to separate carriers from non-carriers. He had, however, been associated and had been in intimate contact with the other boys at Thorn Hill for months, yet none of these boys became infected. Prior to the introduction of the Schick test into Thorn Hill School it was nothing unusual to have different cottages under quarantine for diphtheria. Since we have employed that test there has not been a single case of diphtheria in Thorn Hill School.

CONCLUSIONS

1. The Schick test is harmless.
2. It should be employed in every institution where children are cared for or are congregated for any length of time.
3. It should be as rigidly carried out as vaccination for smallpox in our public schools.
4. Those giving a positive reaction should receive toxin-antitoxin.

I wish to thank Mr. Franklin H. Briggs, superintendent of Thorn Hill School, together with Mr. D. L. Reese and Mr. R. E. McKibben, also officially connected with the same institution, for their assistance and never-failing courtesy. Mr. T. R. McTaggart, of the Pittsburgh Department of Health, deserves my heartiest thanks for his inspiration of this paper.

Wexford, R. F. D. 2.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

HEREDITARY CATARACT AS A MENDELIAN DOMINANT

Report of a Family

DR. W. E. CARSON

The members comprising this family consist of the parents and twelve children. Hearsay information was also obtained of one antecedent generation and one descendant generation, thus making in all four generations.

All members of the family were seen and their eyes examined with dilated pupils, except the oldest child, a daughter, who is married and lives in Detroit, and an infant, who died 5 hours after birth. Two of the children, who were operated upon in the West Penn Hospital, were examined physically with negative results except as to the eyes, and all other members, including the mother and father, appear to be mentally and physically healthy. The teeth appeared to be normal. The father and mother were born in Poland. All the children were born in America. No consanguinity of parents.

The father, (a) Mr. Steve N., age 51. Occupation, miner. Married present wife 1899. Has no knowledge of any of his brothers or sisters or foreparents having had any trouble with their eyes. Vision O. D. 15/15. O. S. 15/15. Media and fundi negative.

The mother, (b) Mrs. Mary N., age 43. Vision began to fail when about 16 years old, and when she reached 22 could only see to walk. At that time cataracts were removed from both eyes in the city clinic of Cracow. Her mother and younger brother and sister, twins, had no trouble with eyes. Father now living at 69, is blind as the result of rather rapidly progressive failure of vision beginning when about 20 years old. Thought to have cataracts. Never operated upon.

The incidence of cataracts in the children is as follows:

(1) Mrs. Anna N. G., age 24, eldest child of Steve and Mary N. Married. Has a son aged 2 and daughter aged one year. Living in Detroit. Not examined. So far as known she has had no trouble with her eyes and no trouble with the eyes of her children has been reported.

(2) Mrs. Pauline N., age 18. Married in 1922. No children. Vision began to fail when about 8 years old, when she began wearing glasses. Discarded glasses 2 years ago, because they did not help her. V. O. D. 15/70. V. O. S. 15/50. Cannot be improved with glasses. Both lenses show rather advanced opacities, the same being more marked in the left eye. These opacities consist of two elements, a more dense roundish center surrounded by an irregular cornea-like zone made up of irregular spine-like rays. The position is posterior cortical. The condition is evidently slowly progressive and the patient is considering operation.

(3) Master Frank N., age 15. When first seen in September, 1921, the following history was obtained: Vision began to fail rather rapidly when ten years old. Has continued to attend school and has passed his tests, but cannot see well in spite of his glasses. Can still see to get around very well, but feels need of more light. V. O. D. 5/200 with P. C. 15/30. V. O. S. 5/200 with P. C. 15/80.

Bilateral cataracts of same type in both eyes were found, the same being more marked in the left eye. The opacity was well posterior, being between the position of the nucleus and the posterior capsule and was made up of two elements—a central quite dense disc-like opacity, surrounded by a more diffuse and ill-defined recticular-like zone of opacity. There was still a fair sized zone of moderately clear lens substance at periphery.

The cataractous lenses have been removed by absorption, following two discission operations on the left eye and one on the right. The pupils were found clear and glasses were ordered January 24, 1923. O. D. S. + 9.00 = C. + 2.50 ax 90. 6/6 pt. O. S. S. + 9.00 = C. + 2.50 ax 90. 6/30 pt.

(4) Miss Rosie N., age 13. First seen September 6, 1921, when the following history was obtained: Vision began to fail when 9 years old. Tried school but gave it up after one week. The vision has become noticeably worse during the past year and for the past 6 months has had to be guided at times in making her way about. V. O. D.: Counts fingers at 6 inches. V. O. S.: Counts fingers at 2½ feet.

Both eyes showed advanced lenticular opacities, the same being of similar type in both eyes, but were more marked in the right eye. Lens of right eye removed by absorption after three successive discissions. The pupil of this eye was found clear and a lense ordered January 30, 1923. O. D. S. + 13.00 = C. + 1.00 ax 90 6/12. The lens of the left eye is now in process of absorption after a through and through inverted V-shaped discission, according to the method recently described by Ziegler.

(5) Master John, age 12, is attending school, and though he has not complained of any visual deficiency, his vision has been found to be considerably below normal, being V. O. D. 15/50, V. O. S. 15/30. The fundi appear negative and the vitreous clear, but both lenses show slight beginning central opacification. In the right eye this appears as a 1½ mm. disc-shaped opacity with a few thin web-like rays radiating irregularly outward, the same being well posterior and situated between the position of the nucleus and the posterior capsule. In the left eye the opacity consisted of a very small speck-like opacity, from which a few very short filamentous rays extend outward for a distance of ½ to 1 mm., the opacity being in the same relative position of the lens as in the right eye.

(6) Miss Mary, age 9, has no ocular complaint. Making good progress at school. V. O. D. 15/15. V. O. S. 15/15, i. e., normal vision in both eyes. Fundi and vitreous are clear and lenses appear entirely clear.

(7) Miss Eva, age 8, has noticed no trouble with eyes, though testing shows vision considerably below normal. V. O. D. 15/40. V. O. S. 15/40. The fundi appear negative, with details normally brilliant. The lens of the right eye shows the faintest suspicion of a posterior opacity. The left eye shows the same somewhat questionable, minute posterior central opacity.

(8) Miss Helen, age 7. Vision by rough tests not impaired. Fundi, vitreous and lenses appear clear.

(9) Miss Julia, age 4. Vision not evidently impaired. Accurate test not possible. Media, including lenses, appear clear.

(10) Master Steve, Jr., age 2½ years. Media, including lenses, appear clear.

(11) Miss Susanna, age 2½ (twin of Steve). Media, including lenses, appear clear.

(12) Miss Christina, premature at 6 months. Died 5 hours after birth. Nothing known as to eye condition.

Here, then, we have a family otherwise normal and healthy, affected with juvenile or presenile hereditary cataracts. In a family of 12 children, born of a normal father and cataractous mother, 5 are known to be affected. Five appear to be normal, the condition of two as to cataracts being unknown, one having died in infancy, the other being married and the mother of two children—living at a distance and not readily accessible for examination.

The affected mother of this family was one of a generation of three, the other two, so far as known, being normal. The father of the mother gives a history conclusively suggesting cataracts. The line of descent is, therefore, direct or continuous through at least three generations. It is to be hoped that opportunity may sooner or later be afforded for examination of the eyes of the daughter and her two children living in Detroit, which may possibly add a fourth to the three known affected generations.

In the presenile and juvenile type of cataracts, to which class the cataracts occurring in the family reported appear to belong, the hereditary element is more readily observed. From the study of a large number of pedigrees of families affected with such types of cataracts, there seems to be no reasonable doubt that on the whole their inheritance follows a line of descent corresponding to a Mendelian dominant, and that they are due to the presence of special factors, individuals not possessing these factors not being able to transmit them.

So it will suffice here to point out that the clinician is justified in assuming that a certain unit character occurs as a Mendelian dominant when it is transmitted according to the following rule: The inheritance will be in direct line of descent and in any given generation one-half of the children will show the defect, the other half being free or normal. The affected ones in this generation will, if they have children, have them in the proportion of one-half affected and one-half normal, while the normal individuals of any generation will have only normal children, normal grandchildren or other descendants further removed. That is to say, the character, when it once fails to appear in any member of the family tree, does not reappear in any of their descendants. In other words, an individual affected with a Mendelian dominant transmits the same to one-half his children, while any unaffected brother or sister of such an individual is incapable of transmitting the unit character and the same will not reappear in any of his descendants.

An interesting variation from the type of Mendelian inheritance, as described above, occurs in the case of the so-called sex linked diseases or abnormalities, well-known examples of which are color blindness and hemophilia, in which the unit character is transmitted typically by females, who though they do not show the defect themselves transmit the same to one-half their children. Among the daughters none will show the defect or abnormality, although one-half of the daughters will be capable of transmitting the same. Among the sons one-half will show the abnormality and will transmit it, while the other half will neither show nor transmit it.

In line with the growing conception of modern medicine that its chief function should be prevention, the study of the laws of inheritance or the science of genetics and the application of the same in the field of eugenics becomes increasingly important. While for a period of time in the future our knowledge of the subject will probably be insufficient and society unprepared for any positive action in the way of restrictive laws devoted to the field, we are even now in a position to act in an advisory capacity.

For instance, let us suppose that a member of this family or of a family affected with any of the so-called dominant characters or heredity, should ask as to the advisability of marriage from the standpoint of the probability of the affection being transmitted, would we be in a position to give such a one conclusive advice? Thanks to our knowledge of the principles of Mendel, we can confidently advise as to such conditions.

To a member of such a family contemplating marriage and not affected with the condition, who might ask for information as to the probability of his children being affected, our answer would be: "You, yourself, though belonging to an affected family, are free from the affection; your children and your children's children will be free from it, even though you should marry one of your own unaffected relatives."

To an affected member of such a family our answer would be: "You yourself are affected. If you should have a child, the chances for and against that child having the affection, are exactly even. The same will be true for each subsequent child. Should you have a large family, it is probable that about one-half will be affected. Should you marry a person affected in the same way as yourself, the probability then will be that of any children born of this marriage, three out of four will be affected, and there is the further probability that of every three such affected children, one will inherit the affection from both parents and will consequently transmit it to every child which he or she may have."

In the case of a sex-linked disease, taking for example hemophilia, our advice would be to daughters, that if they should have children, they may expect that one-half of the sons will show the defect, and while their daughters will appear normal, one-half will transmit the defect, because their germ plasm carries the taint, while the other half whose germ plasm is free, will be incapable of transmitting the defect.

To affected males of such a family, we would say that none of their children will show the defect, but that one-half of their grandsons born to their daughters will have it. To unaffected males we would say that they may expect that none of their children or descendants will show the defect.

Besides the obligation of medical men to be prepared to make such practical application of such known principles of heredity, it should be considered a duty by those favorably situated for the purpose to collect data of suitable pedigrees and to see that the same go on record or are made available for study by one of the endowed research institutions which exist for the purpose of such investigations.

INTERNAL DERANGEMENT OF THE KNEE JOINT

DR. JAMES O. WALLACE

The object of this paper is to call attention to observations made in the examinations of weak knees, and to pathology found in operating on cases of recurrent locking of the knee joint. The exciting cause is usually some form of trauma, and the conditions produced vary from a simple sprain of the internal semilunar cartilage, to rupture of the crucial ligament and fracture of the spine of the tibia. Dislocation or fracture of the internal semilunar cartilage is the most common cause of derangement of the knee joint.

Mechanism of Injury: With a knee partially flexed and the foot fixed in an everted position, there is an external rotation of the head of the tibia on the femur. This opens up the joints and allows lateral mobility. Force being applied, the internal lateral ligament carries the internal semilunar cartilage with it, and as an attempt is made to straighten the leg, the cartilage is caught by the internal condyle of the femur, rotating internally on the head of the tibia. The cartilage may slip back, or be split longitudinally or fractured. In typical cases, the symptoms and history are as follows: a sudden severe strain with knee in a flexed position, something slipping in the joint, usually severe pain, and immediate disability, the characteristic symptom being inability to extend the knee completely.

In the recurrent and atypical cases the patient has only a vague idea of the injury. He feels something slip in his joint, but there is no locking. The knee becomes distended with fluid. Examination will reveal a tender spot over the internal lateral ligament and over the anterior margin of the tibia just internal to the patellar tendon. Here there has been an injury to cartilage without displacement, or if there has been displacement it has slipped back into position. Under proper splinting and rest, this will go on to recovery without any further trouble.

The majority of these cases are not seen, and a series of slight trauma to the injured cartilage causes further effusion into the joint, with subsequent stretching of the capsule and ligaments, atrophy of the muscles, and proliferation of the scar at site of healing of the torn cartilage. There results either a lengthening of the anterior end of the cartilage which loosens its attachments, or what usually happens—a mass of fibrous tissue is formed underneath and anteriorly to the cartilage, causing it to curl up and produce locking on any slight or unusual twist.

In atypical cases with the history of a severe wrench of the knee joint followed by some effusion into the joint, the joint apparently recovers but there is always a complaint that the joint is weak. Examination will show some swelling of the joint and points of tenderness over the internal lateral ligament and over the inner anterior aspect of the joint. There will also be a slight limitation of complete extension, so slight that a casual examination will miss it. This is a very important point in the examination. The patient has had a partial locking of the knee which he has not recognized, and the knee has accommodated itself to this weakness.

In a majority of cases in which there has been a severe injury, the cartilage has not been completely restored to its normal position, or if in its normal position, a portion broken off or loosened at its anterior attachment has been thickened either by hypertrophy or by a mass of fibrous tissue caused by constant irritation during the process of repair.

A pad of fat subjected to nipping loses its vitality and becomes infiltrated with lime salts. Under these circumstances the knee accommodates itself to weakness and is in a position of slight locking and hence unstable. A slight twist causes further locking, or a recurring synovitis.

Occasionally such a knee in a quiescent state will show no limitation of extension, but after a severe test, as after a long walk over country roads, examination will show a return of swelling, limitation of extension and the loosened end of the semilunar bulging on acute flexion of the knee.

In the cases seen it has been practically impossible to differentiate between derangement caused by a loose cartilage and one caused by the nipping of a pad of fat. In some cases which have been operated, the two conditions were often present, and in two cases at least, pedunculated pads of fat were found, on operation, where a previous diagnosis of loose cartilage had been made.

Case 1, typical case of recurrent dislocation of internal semilunar cartilage: John N. F., aged 23, single, car repairman helper. Examined March 9, 1923. January 14, 1923, car coupler fell, striking him on outer side of right knee cap. Knocked knee inward with foot twisted. Knee cap dislocated inward. Patient says knee was flexed and as he made an effort to straighten it, felt something snap and leg straightened. Had application of iodine and bandage. Next day leg began to swell. Remained swollen and painful. Used crutches for a week. Went to a private hospital and had epsom salts wet dressing for a week and a half. Went home, felt fine. The following day in getting out of bed, knee again locked, pushed it and felt something slip. Then had violet ray treatment. Knee has locked several times since.

Examination showed right knee swollen both above, below, and on both sides of patella. Limitation of complete extension. Flexion is good, but complains of pain over internal semilunar cartilage when moved. Tender over anterior end of internal semilunar cartilage. X-ray negative. Diagnosis: dislocation and tear of internal semilunar cartilage.

March 28th, operation under gas anesthesia—straight incision, internal and parallel to patellar tendon, extending to below margin of tibia. Internal semilunar cartilage torn and dislocated anteriorly lying in front of joint. The rupture was at the internal border of cartilage at its insertion into the capsule at the internal lateral ligament. There was a mass of fibrous tissue which was richly injected. The synovial fringe and fat was injected and edematous. There was a panus growing down over the internal condyle. About an ounce of straw-colored fluid escaped on opening of capsule.

Case 2, atypical recurrent dislocation of joint: Miss E. S. referred by her brother, Dr. S. Examined March 9, 1922. Ten years ago, while in surf at Atlantic City, had left knee twisted. It became very much swollen and painful and she was in bed for two days. Around 1st of December, 1921, left knee began to pain and swell. Improved after two weeks. Two weeks before examination, knee became worse, was swollen and there was difficulty in walking. Examination showed a tender area over the internal semilunar cartilage and a moderate degree of limitation of extension. There were no other symptoms or physical signs. A diagnosis was made of dislocation and tear of internal semilunar cartilage, and an operation was advised in spite of lack of other physical signs.

Operation was performed March 29, 1922, under gas anesthesia; straight incision. Panus was found growing over inner condyle of femur. There was a large tab of injected fat with one end loose in the joint. The internal semilunar cartilage was much frayed and loose on its anterior margin. The panus was removed, as was the tab of fat, and the internal semilunar cartilage. A large compression bandage was applied. She went home and in four weeks from time of operation she wrote: "I am very much delighted that I can walk around without any pain or limping."

Case 3, nipping of a tab of fat, which simulated dislocation of external semilunar cartilage: Wm. B., aged 20 years, Mercy Hospital, January 14, 1922. Night before was playing basket ball. While in the air jumping for the ball, felt his left knee lock and he came down on other leg. Knee was very painful and swollen and he was unable to straighten it. On examination, left knee was locked in about 45 degrees of flexion and was so painful that he would not permit it to be moved. The knee was prepared for operation, and on January 16, 1922, under gas anesthesia, a reduction was attempted. On manipulation of knee a mass about the size of a small chestnut protruded from the anterior aspect of the joint just internal to the external lateral ligament. This mass was hard and crepitated. It disappeared under direct pressure. An incision was made just internal to the external lateral ligament, and when the capsule was opened, there was an outpouring of straw-colored fluid, and a mass of very dark almost macerated fat was extruded from the joint. This mass had been pinched and became devitalized. It was removed, along with a large piece of fat at its base. The external semilunar cartilage was intact and not touched. He made an uneventful recovery. The diagnosis before the operation had been a ruptured and torn external semilunar cartilage.

Case 4, recurrent dislocation in which symptoms were not always present: M. S. P. B., aged 33. Seen July 27, 1922. History: Two months ago took an automobile trip and after returning felt stiff and sore all over. Symptoms all disappeared except right knee. Now complains of pain and stiffness on arising and using it. First few steps are painful, also painful if he flexes knee beyond right angle. This knee was injured on several occasions—first time 20 years ago while riding a bicycle, also hurt in football.

Examination: No swelling or redness of knee. Tender spot on the internal condyle of femur. No tenderness over semilunar cartilage. No loss of extension. Strapped, and also shoes raised on inside. Was not seen for five months. Same treatment was continued. Strapping for two months. Patient said that after usual walking or playing 18 holes of golf his knee swelled up and got stiff. On April 4, 1923, he appeared after a long walking trip. Examination showed right knee swollen. Could not extend leg. Cartilage could be palpated on inner anterior aspect of joint on flexing knee. Diagnosis: Dislocation of internal semilunar cartilage. Operation was advised.

Apirl 9, 1923, under gas anesthesia, straight incision. There was a large pad of fat outside of capsule. On opening capsule there was a gush of straw-colored fluid. The cartilage was lying loose in joint and there was a large panus growing down over internal condyle, with erosion of the cartilage of condyle near the attachment of the internal lateral ligament. The infrapatellar fat was hypertrophied and injected. The cartilage and infrapatellar fat were removed.

CONCLUSIONS

Many patients have knee joints which have accommodated themselves to weakness and are in a position of slight locking all the time, as evidenced by a lack of complete extension.

Proper splinting and rest until healing takes place is absolutely necessary in all joint injuries.

Repeated locking and trauma to a joint are always followed by pathology.

Lack of complete extension of knee is the most important sign in internal derangement of knee joint.

Careful and sometimes repeated examinations are necessary in making a diagnosis of internal derangement of knee joints.

Frederick B. Utley, M.D., Secretary.

HERPES ZOSTER

ACUTE POSTERIOR GANGLIONITIS

DR. NELSON H. CLARK

Definition: Herpes zoster is an acute inflammatory disease, characterized by soreness, burning, neuralgic pain, one or all, along certain cutaneous nerves usually followed by the appearance of groups of vesicles along same nerves.

Symptoms: In many cases, perhaps the greatest number, a slight burning and itching may be all that is noticed in addition to the rash. In others, sharp neuralgic pain may occur. The sensory disturbances may precede the eruption or occur synchronously with it. The usual interval between the beginning of sensory symptoms and the appearances of the skin lesions is 24 to 48 hours. However, a much longer time may elapse.

The eruption begins as one or more reddish patches. Later, small papules appear on the red area. These in turn develop into vesicles. New areas may continue to appear from two to three days, sometimes longer. The vesicles are fully formed within two days. They do not spontaneously rupture, but dry and form crusts which fall off, leaving a red but unscarred surface. There are exceptions to this. Scarring may be marked, as in one case to be reported. The fluid in the vesicles is clear at first, later becoming yellow, and at times is hemorrhagic. The eruption is almost always unilateral. When bilateral, it is usually on the same level.

Fever, chilliness and malaise may be present. The neighboring lymphatic glands are consistently enlarged.

Etiology: Zoster is, in almost all cases, an acute infectious disease. In support of this are: (1) Fever, malaise, chilliness, glandular enlargement; (2) the localization of the lesion; (3) epidemics; (4) conferring of immunity.

Pathology: In all cases which have been examined at autopsy, there has been found an acute inflammation of the ganglion, with blood, destruction of the cells and fibers, and inflammation of the nerve sheath.

Complications: The eruption may become gangrenous and abscesses may form. Meningitis and septicemia have been noted in herpes involving the eye. Motor disturbances may occur; for example, paralysis and atrophy, hemiplegia, or paralysis of the bladder.

When the rash is well developed, the diagnosis is easy. Before the appearance of the eruption, with only sensory disturbances present, the physician is hopelessly lost. He then makes an anatomical diagnosis, depending on the location of the discomfort, which gives neuritis, migrane, pleurisy, intercostal neuralgia, gall-bladder and renal colic, appendicitis and sciatica.

CASE REPORTS

(1) *Simulating Renal Colic:* Mrs. C., 65 years old, was suddenly awaked by a sharp pain in region of left kidney, radiating toward the groin. Renal colic was suspected. Urine examination negative. Seven days later the rash appeared. Only one characteristic spot was noted. Pain was severe enough to require morphine, and continued in great severity for two months, with occasional attacks for a year.

(2) *Obscure Abdominal Pain—Hemorrhagic Herpes:* Mrs. H., 50 years old, under a neurologist for years for nervousness. For several days had had sharp pain in left upper quadrant. When I saw her, the pain was severe, there was slight nausea, a temperature of 99, tenderness of abdomen, but whether deep or superficial I could not determine. White blood count normal. Two days later the herpes appeared. These became hemorrhagic and the fever rose to 101, and remained between 99 and 100 for over a week.

(3) *Marked Nerve Disturbance:* W. W. P., aged 62 years, came to the office October 18, 1921. Was perfectly well until seven or eight weeks ago, when his right leg became sensitive to pressure, later there was pain in the thigh. This was followed by a rash, vesicular in type, along inner side of thigh. Since then there has been more or less weakness of the leg. Three weeks ago, knee gave way and from that time on could scarcely walk. P. E.: Weight 164 (180 two months ago), reddish areas along inner side of right thigh. No atrophy of right leg by measurement, but muscles flabby. Slight anesthesia over inner surface of right thigh. Apparently unimpaired strength in foot and leg on extension. Difficulty in raising leg at hip. K. J. and ankle jerk absent on right, normal on left. No Babinsky or Kernig. Rectal examination negative. Blood and urine negative.

Patient did not return until March 7, 1922. Pain more severe. Great difficulty in walking. Weight 145. Atrophy of thigh and leg.

With the idea that the first diagnosis was wrong, he was sent for an x-ray examination of spine. The report was a rather extensive osteo-arthritis of the lumbar spine, the change being most marked in the region of the lumbar joints.

He was sent to an orthopedic surgeon who said that he did not believe the condition of the spine could cause the condition of the leg and would not recommend supporting appliances. He was then referred to a neurologist. On March 24, 1923, Mr. P. was seen with an acute gall-bladder attack. He weighed over 170 pounds. He walked with a cane on account of weakness of right leg, but was free of pain. K. J. and ankle jerks were absent. It is believed that the original diagnosis of herpes zoster was correct.

PRIMARY CARCINOMA OF APPENDIX

DR. C. O. ANDERSON

Primary carcinoma of appendix has been considered a very rare condition. Since the routine removal of the appendix in abdominal operations and the routine examination of the same, observed cases of carcinoma of the appendix have been more frequent. Most of the cases observed have been accidental findings. Some cases, however, were operated for appendiceal symptoms. Some of the interesting questions which arise in connection with this condition are the following:

(1) What degree of malignancy does carcinoma of the appendix possess?

(2) Frequency of this condition?

(3) What are the symptoms which aid the diagnosis of carcinoma of appendix, and which differentiate from other conditions?

CASE REPORT

Patient, F. McM., was admitted to the West Penn Hospital on September 3, 1922, with the chief complaints of: (1) Pain in right lower quadrant of abdomen, and (2) tenderness on deep palpation.

Present Illness: For the last few weeks patient had attacks of indigestion quite frequently. Had colicky pains which radiated down to the right side. During such attacks he vomited. Medical treatment would relieve his pain but would leave a tender region about the appendix, which lasted for two or three days. The pain was usually localized about McBurney's point. There was definite localized tenderness over McBurney's point on deep pressure. Patient's temperature and pulse normal. Leucocyte count normal. Clinical diagnosis of subacute appendicitis was made.

Pathological Report: Appendix was 12 cm. in length. It had a somewhat irregular diameter, averaging ½ cm. Its serosa was congested. On opening, a great deal of hemorrhagic feces was found. The wall was edematous, mucosa was smooth, covered with numerous pin point hemorrhages. There was, however, a small nodule averaging 3 mm. in diameter which was rather friable.

Microscopical section showed a surprising picture. Large epithelial alveoli were scattered throughout the wall. The invasion of the epithelium could be followed on the surface. The cells were cuboidal, irregular in size; quite a few mitotic figures were also seen. The stroma was quite dense and contained lymphocytic reactions. The aveoli contained newly formed glands scattered here and there.

A. D.: Adenocarcinoma of appendix.

The largest number of appendices carefully studied is reported from the Mayo Clinic. In 1911, in a series of 5,000 specimens, MacCarty found 22 carcinomatous, giving a percentage of 0.44, which is unquestionably a very high percentage. None of these 22 cases suggested carcinoma. Nine of the cases had symptoms of acute appendicitis, and some of these suggested abscess, which later proved to be tumors. In 17 cases not even the gross examination suggested a growth, the serosa of the appendix not being involved. Microscopical examination usually showed unsuspected results. In a later series they found eighteen (0.6 per cent) of 3,039 specimens to be carcinomatous. In 59 per cent of 71 cases reviewed by McWilliams, the carcinoma occurred at or near the tip, and in 33 per cent no tumor was visible to the naked eye. In 23 of 42 cases, or 55 per cent, one or more solid tumors were visible.

The youngest carcinoma of appendix was found at the Mayo Clinic in a girl of five years, with symptoms of acute appendicitis. The oldest, reported from the same place, was 80 years, which was an accidental finding in an autopsy, although most cases of intestinal cancer occurred in the sixth decade.

Most of these cases have a history of chronic appendicitis. According to Landau, about 50 per cent have symptoms referred to the appendix. The rest were accidental findings without any symptoms. When there are appendiceal symptoms at hand, tuberculosis has to be considered. Swelling of the appendix would naturally suggest abscess. This has, however, a rather rapid formation.

Pathology: Grossly, it is not very often that we find a large tumor mass, and as mentioned in 80 per cent of the cases reported by Mattakanski there was no gross suggestion of a tumor. Metastatic formation is still very rare; none in the 22 cases of Mattakanski were spread to any other portion of the body.

Microscopically it shows the malignant epithelial growth beyond a doubt. The usual form of it is an alveolar growth, with some suggestion of the adematous. In some cases, colloid cancer has also been observed by Elting.

Etiology: It is very striking to notice that cases of primary carcinoma of appendix present mostly symptoms of chronic appendicitis. The fact is that the appendix in all these cases showed fibrosis, the chronic inflammatory process. In most cases the chronic appendicitis has been a forerunner of the cancer. Chronic appendicitis has been considered as a precancerous condition for a long time. Letulle described the relation between chronic appendicitis and cancerous transformation as early as 1900.

HEREDITY AND INTELLIGENCE

DR. E. E. MAYER

Intelligence is composite of innate and acquired factors. The tests used by psychologists in the Army were questions largely intended to search out the experiences of individuals, and cannot be considered to give us a positive answer as to the intelligence of those examined. Admitting that they furnish data concerning experiences and give us a relative index of the percentile differences in this respect, does not enable us to draw conclusions in respect to race. Hereditary variability governing the brain must be conceded, but it cannot be determined by intelligence tests alone.

Inbreeding and disease produces changes in mental endowment just as they do in physical heredity. The Southern "cracker" is an example of this and an evidence of the poor logic in asserting that the Anglo-Saxon stock (implying *all* of that stock) are superior to other people. The large amount of mental deficiency in Vermont points to the same conclusion.

Dr. O. Pine queries: Does your society honor the wisest, the ablest, the most unselfish of its membership in the bestowal of its most important positions, or does it usually select the popular favorite of the moment? In other words, is it a devotee of "popularity, the basest coin that circulates amongst us," in the language of Montaigne? Or does it bequeath its kingdom Alexander-like, "to the worthiest among you"?

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JULY, 1923

EDITORIALS

PHYSICAL EXAMINATION OF THE HEALTHY

On Thursday, June 21st, Dr. Charles H. Miner, Commissioner of Health, called a conference in Harrisburg of many agencies concerned directly and indirectly in public betterment for the purpose of discussing the advisability of inaugurating and pushing a campaign for the examination by competent medical men of those citizens of the state, and of all ages, who because of apparently perfect health are not under the supervision of a medical man. This suggestion of frequent examinations of apparently healthy individuals has been made by the American Medical Association, by various health organizations and thousands of individuals who have believed that in it lay the answer to most of our ills. It has come up for consideration again at this particular time because of a communication from the National Health Council addressed to Dr. Miner, requesting him to take all means in his power to insure that every citizen of Pennsylvania is examined every year on his birthday and that a campaign with this end in view be started on the 4th of July. With their characteristic liberality regarding both ideas and material, the National Health Council offers as their contribution to supply, presumably at or near cost, pictures and posters.

In the largely attended conference an Executive Committee was appointed, which formulated the following line of action:

> That a plan of individual examination setting forth the minimum requirements be prepared and acted upon within a week.
>
> That the Committee recommend the annual examination of all infants; of all adults about or past middle age; and of all others every five years.
>
> That the publicity campaign be opened on or about July 10th and that the birthday of the individual be suggested as the specific date for the examination.
>
> That for the betterment of public health, all physicians be asked to notify their patients that preventive medical examination is desirable, and to make appointments for such examinations. And that physicians be requested to make bulk reports as to the number of health examinations by month in the regular meeting of their County Medical Societies, and that the Secretary of each County Medical Society be requested to forward bulk reports of county examinations to this committee.

A medical examination calls for time, effort and money. There must be a compensating return in the majority of cases to make it widely acceptable. An annual examination is not called for in most people. It is perhaps most serviceable during infancy. It is already provided for in childhood and adolescence.

As a method of celebrating a birthday it would not seem to make its large appeal; nonetheless the fixing of a certain day has its distinct value and this suggestion is one worthy of careful consideration. The examination of a well person should be not for the purpose of detecting a disease, but for the assurance that he is well. This is most rational, and probably of far more value than the news that he has a lesion which will shorten his life or lessen his efficiency.

The examination involving large numbers, should be simply an indication of, first and preferably, health and a period of surcease from the doctors in the absence of acute infection, or a beginning weakness, with indications for more minute examination to detect its site, its nature and its promise, from which should be deduced the means of combating it. There must be laid down in any condition the fundamental technic of the first broad examination, and this the Executive Committee propose shall be done. It is also essential that physicians must know how to make these examinations and how to infer from their findings the needs of the individual. It is still more needful that the physician shall not look upon this project as a passing fancy, shall not ask the patient, "Why do you, a perfectly well man, or woman, come to me?" and dismiss the whole subject as one of little import.

In making examinations of the well it is needful that the well people should want to be examined and that the physicians should be willing to examine them adequately. The means of reaching the people is through their physicians, nor is there the slightest impropriety, indeed it is highly desirable that each physician in the state, after a careful investigation and assurance of competency to make such an investigation, communicate with every one of his patients whom he has not seen for a long period, call his or her attention to the desirability of these examinations and suggest a definite time when such can be made. Having made one examination, a date should be placed for the next one, since these examinations require time and often more skill than is applied to the diagnosis of established lesions, nor should the physician be without his just monetary return.

By habit and imitation these examinations among the well-to-do are becoming more and more frequent. They are now rarely foregone in the case of a baby. The successful man of middle age habitually goes to his doctor just so often to be gone over, much as he goes to his dentist, though not so frequently, unless the doctor so directs. The youth and robust man goes to the doctor never, unless driven by his wife or mother, and then reluctantly and because of an acute affection. Perhaps he may be induced to be more wise if the public schools promulgate, as they propose doing, an adequate health education, and if during this period of adolescence the habit of frequent examinations is formed.

Industries commonly require an entrance examination. They are loth to call for aught else, relying upon those in their employ to seek aid for disability, after being forced to secure it when the inaptitude for the performance of duties is detected. That universal and frequently repeated medical examinations will largely affect statistics is scarcely to be hoped. That they will add to the sum of human happiness by accentuating the importance of human health can be depended upon absolutely. Their acceptance at the hands of the laity depends at the present and in the main on the belief of the doctors in their value and their ability to make them worth while.

Perhaps the most important initial step in this whole campaign is the establishment of standards of physical examination and standards of interpretation. This the Executive Committee is endeavoring to accomplish. Interpretation is perhaps especially difficult since it is well known that albuminuria in itself is likely to be no indication of disease, or even the beginning of a disease, that a systolic murmur is compatible with a perfectly healthy heart and that high blood pressure during the stress of an examination may be misleading. Edward Martin.

RECONSTRUCTION AND REHABILITATION IN CIVIL LIFE

What are we doctors going to do to restore to normal and army fitness standard, the large number of citizens who are not up to anything like the high standard of industrial efficiency they should be because they suffer from many diseases which are curable, and must be cured, not only for humanitarian reasons but for economic ones?

A majority of the defects which shut out a man from being a soldier are curable. It is true, campaigns of education by the profession and individuals have been carried out for particular diseases and in isolated districts. Cancer, tuberculosis, social and occupational diseases, have been exploited in medical magazines; but such minor diseases, so easily cured or corrected, as caused exemptions in the first draft were not even suspected or regarded as of much importance.

To show how neglectful we have been in endeavoring to cure or benefit those so afflicted, do you realize that 25 per cent of the doctors who applied for commissions in the Medical Reserve Corps were rejected because they were physically unfit?

The causes for rejection were defective vision, defective hearing, bad teeth, flat feet, varicose veins and hernia, while some of our brothers were suffering from tuberculosis, chronic appendicitis, persistent albuminuria and tumors. What of chronic appendicitis in four doctors out of forty-two rejected? What of seven out of forty-two rejected with bad teeth and gums? And fourteen with defective vision and six with cardiac derangement, in only two instances organic?

Certainly such figures should teach us physicians that in the matter of reconstruction and rehabilitation, we can get plenty of practice by beginning at home. Our first duty is to guard zealously and persistently the health of our own bodies.

Would we have much confidence in our banker if he urged conservative investments and then bought gold bricks with our hard-earned and hard-collected savings? Would we expect our parson to preach against dishonesty and then commit forgery in our name?

The national movement to-day towards physical fitness is a tremendous constructive force. The man whose muscles have not grown firmer, his waist smaller, his body more erect and stronger, was either in prefect health at the beginning of the war, or he did not live up to his responsibility in helping win the war. Mental, moral and physical fitness is the watchword in the ranks of the soldier. So it must be in the ranks of the workers, for while war requires a body of trained strong men in the field, it also requires a greater army of physically fit workers for industrial service at home. This physical fitness can be kept up to its highest efficiency only by the skill and care and constant supervision of medical advisers.

We, who, in a measure, have charge of the public health would feel the responsibility of raising to greater efficiency our own bodies and those of our patients, who could so easily be placed on a higher plane of business and industrial activity by applying the principals of reconstruction and rehabilitation, and thus live up to our obligation. J. B. McA.

EDITORIAL COÖPERATION vs. EDITORIAL ISOLATION

About a year ago the Louisiana State Medical Society purchased the *New Orleans Medical and Surgical Journal* for the official publication of the Society, and are now passing through the period of transformation. Instead of blindly "going it alone" the Society wisely adopted the policy of finding out how others do it, and has sent out a questionnaire to a number of the other journals of the country, requesting information on matters of organization, management, editorial and executive staffs, etc.

This is surely a commendable procedure and will doubtless meet with a ready response by the journals of which the information was asked. Moreover, it is one of the many signs that the medical journals of the country realize that they can make substantial progress only by standing together. We welcome each of these signs, for it has long been our opinion that a closer relationship should exist between the editors, more particularly of the many state journals which are published at the present time. These journals can in no way be considered competitors; each is an integral part of a potentially powerful whole. But so long as the left hand and the right do not know the activities, each of the other, how can they be expected to coördinate their efforts to exert the wide and far-reaching influence of which they as a whole are capable?

We feel that it would be eminently fitting for the American Medical Association to assist the state publications by asking the editors of the state journals to meet in Chicago at the time that the State Secretaries' Conference is held. At such an Editors' Conference it would be possible to compare notes and to obtain the constructive criticism of one another, discussing and adopting general policies which would aid in producing better journals for the members of the medical profession in each state.

The Atlantic Medical Journal would suggest that the editors and officers of the state medical journals consider this problem, with the end in view of working out some plan, prior to the next meeting of the State Secretaries, by which a State Medical Editors' Association may be formed. We believe better results would ensue from such coöperation than from a continuation of our present policy of isolation, and the Atlantic holds itself ready to assist in any way possible in the furtherance of this proposition.

OLD AGE

Volumes have been written on the subject of the care of the child, and advice has been freely given as to the preservation of manhood and womanhood. It would seem that our efforts thus far have been so wholly centered around the new life, its future, its preservation for material and spiritual gain, that we have overlooked the further preservation of that individual as represented in the life of declining years. We are inclined to regard him as a human mechanism, having served his day, who now patiently awaits, amidst caresses, love and sympathy, the final call of Jehovah.

Those who are interested in American literature dealing with geriatrics will find a number of general articles on various senile conditions, but very few texts dealing with the subject as a whole. The work of Nascher, with an introduction by Jacobi, represents one of the most comprehensive works of this kind. According to Jacobi, the other countries have not given much consideration to this subject. Germany, however, takes the lead in its contributions. It would seem, therefore, that the study of old age with its many possibilities offers a hopeful field for study and investigation.

The most hopeful results offered by further investigation and study of old age would be a general preservation of the physical and mental health, whereby the aged individual would be able to enjoy, free from undue hardships, pain and oppression, the declining years of his life. No one anticipates any great results from the standpoint of rejuvenation, for history in its repetition does not apply to the longevity of life and the Methuselahs of the former epochs of the world have not reappeared in the cycle of time. It is safe to assume that despite the advocates of Couéism, spiritual seances, monkey gland transplantation, rejuvenating tonics or the charming touch of mystic cult, we cannot prevent the inevitable. We can, however, possibly delay the progressive deterioration by protecting the human mechanism in so far as possible from certain diseases and by relieving the still active cells from undue strain and stress which comes from physical and mental labor as a result of undue anxiety from environmental, social and economic sources of unhygienic living.

Those who are familiar with the need can readily appreciate the cell changes which are responsible for this condition and the subsequent anatomical and physiological disorders. Furthermore, they can appreciate the psychology of the aged, the prominence of the ego, the strong desire for self-preservation and the fear of physical handicap and permanent incumbrance upon their families or the community. They also will appreciate that the situation does not appear as hopeless as it seems, for physical hygiene offers a great deal for the preservation of the physical body, while mental hygiene offers equally as much in the preservation of the mental faculties.

In other words, rest, fresh air, feeding, physical exercise, occupations and diversion, productive or nonproductive, consisting of reading, conversation, light work, music, games or any other form of something to do will prove very beneficial. J. A. J.

THE PROBLEM OF EPILEPSY

Assuredly one of the disappointing things in modern medicine has been the utter failure to advance our knowledge of the causes of epilepsy and allied convulsive states. During the Christmas holidays the Association for Research in Nervous and Mental Diseases devoted two entire days to various phases of the problem, and one must acknowledge that little of real value came out of the meeting. One noteworthy fact, however, was emphasized by several investigators who approached the problem from the experimental side, and that was the great amount of useless, untrustworthy and contradictory information that has crept into the literature today. The acknowledgement, therefore, that an absolutely fresh start must be made is something of real value, after all.

Much work of promise is being done in the study of the convulsions of uremic and eclampic states, and the probable solution is bound to shed some light on the so-called epileptic group proper. Animal experimentation, especially with the use of absinthe as the exciting agent, offers a hopeful method of studying the mechanism of the fit—not only as regards the level of motor discharge, but also as regards the effect of experimental endocrine disturbance and drug therapy.

Until some definite contribution is made, however, the physician can discharge his duty to the patient in the so-called idiopathic group only by a judicious and detailed symptomatic treatment, in which diet, regulation of the gastro-intestinal tract and the use of bromides or luminal in adequate dosage, give on the average, reasonably good results. G. J. W.

THE NASOPHARYNX AS A FOCUS OF INFECTION

It has been definitely established that arthritis, various rheumatic conditions, neuritis, endocarditis and other inflammations may result from various localized foci of infection, such as pyorrhea alveolaris, tooth abscess, carious teeth, infected tonsils, inflammation of the air-sinuses, mastoiditis, chronic appendicitis, cholecystitis and so on.

The removal of abscessed teeth has frequently been attended with prompt recovery from some long-standing metastatic general condition resultant upon such local infection, or—the more scientific procedure—the proper treatment of pyorrhea or apical abscesses, when carried out intelligently by a capable dental surgeon, has given equally good results without the loss of the teeth. Similar results have been brought about by the removal of tonsils or adenoids, and by prolonged treatment of chronic sinus involvement.

There are, however, cases of so-called rheumatism, neuritis, or arthritis, some with associated endocarditis, in which no primary focus of infection can be demonstrated, the teeth having been extracted, or upon numerous thorough examinations pronounced in perfect condition, and no evidence of infection found in any other locality. In such cases as these, if the attention is directed to the nasopharynx the etiological factor of the disorder may in some instances be discovered.

It was conclusively demonstrated in our army camps that many individuals harbor meningococci in the nasopharynx, although such individuals may not have suffered from the disease; and it was therefore a routine procedure, when meningitis occurred, to examine an entire company or even a regiment for the purpose of discovering meningococcus carriers. This was accomplished by taking cultures from the nasopharynx with a West tube and inoculating suitable media.

In carrying on this work it was observed that many of the men harbored in the nasopharynx, the hemolytic streptococcus or the streptococcus viridans, and that many of these hosts suffered from rheumatoid and allied conditions.

With this in view some investigations have been carried on upon individuals suffering from rheumatic conditions, myalgia, neuralgia, neuritis, endocarditis, etc., in whom no localized focus of infection could be demonstrated. It was found that in a number of such cases a pure culture, the hemolytic streptococcus or streptococcus viridans, was obtained from the nasopharynx.

The culture is taken by the use of the West tube, which, it is almost necessary to state, is a long glass tube curved at a right angle near one end and containing a cotton swab on a wire. The curved end of the tube is passed up back of the uvula and the swab pushed out a distance of half an inch or a little more, passed several times over the posterior wall of the nasopharynx and withdrawn. It is then streaked over the surface of the culture medium (5 to 10% human blood agar-agar) in a Petri dish which is incubated 24 hours.

The hemolytic streptococcus grows as a very small colony with a clear or transparent area about it, caused by the action of the organism in dissolving the blood. When present, this organism is generally so abundant that the path of the swab is seen as a transparent streak across the blood agar.

The streptococcus viridans grows as a small colony about which is a green area—the hemoglobin having been converted into methemoglobin—and with this organism the path of the swab is frequently seen as a pale green streak.

The treatment of the condition should properly be carried out by the nose and throat specialist, who uses argyrol tampons in the nose and applies his antiseptics to the nasopharynx through the mouth. After a week or two of such treatment he finds the patient greatly improved, but the result of the culture taken at this time, to his great surprise, is frequently found to be the same as when first taken, and sooner or later he learns that it is a long, hard struggle to rid the nasopharynx of either of these streptococci. One might suggest the employment of dichloramin T, as used in the case of the meningococcus carriers.

The administration of a vaccine made from the organisms recovered, in conjunction with the local treatment, gives promise of the best results.

G. R. M.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

LIFE INSURANCE EXAMINATIONS

In the year 1921, two hundred ninety-two life insurance companies disbursed fees for medical examinations totaling approximately $10,000,000.00. Assuming that twenty-five thousand doctors of medicine in the United States made such examinations during 1921, the average amount of money distributed as fees for life insurance examinations for the year would be $400.00 to each of the twenty-five thousand physicians. These figures are mentioned to fix in the minds of our readers the thought that fees for life insurance examinations form no inconsiderable proportion of the income of many practicing physicians.

Needless to state, many physicians who seek and receive appointment as medical examiner for life insurance companies are in time disappointed in the income derived therefrom. This disappointment is often based on the finding by the interested life insurance company that certain medical examiners have no greater interest in the company than the first formal examination of an applicant for insurance and the subsequent collection of the examination fee. Medical examiners who have proper appreciation of the importance of thorough examinations, who spare no efforts to ascertain and fully develop the exact facts in each case, keeping in mind that they are employed by the insurance company for this service and not by the applicant, will soon become known to all insurance companies as dependable examiners. Examiners who are found to be unreliable are through the united efforts of the insurance companies soon so catalogued by all companies.

The selling of life insurance, like all thoroughly standardized vocations, is a highly competitive business, and for this reason requires often on the part of the medical examiner a certain degree of interested coöperation in making and keeping appointments for the examination of prospective policyholders. It is true that the medical department of every life insurance company prefers that medical examinations shall be made at the office of the examiner, but business expediency often demands that such examinations be made in the office, the home or the place of the prospect's employment. These demands upon the dignified routine of the older medical practitioners are often met in such a manner as to lead to the employment of a younger and less experienced medical practitioner as an alternate examiner.

Life insurance companies in choosing local examiners usually seek men who are well trained, well equipped, well established and highly connected with local institutions and medical societies. These are essential qualifications. If supplemented by the breadth of vision that sees beyond the immediate fee into the possibilities of widening acquaintanceship, not ethically obtainable by any other connection, the possession of such qualifications often leads the examiner to a larger clientele and permanent association with a dignified phase of medical practice.

Increased financial income and ethical broadening of acquaintanceship are not the only benefits derived from experience as a life insurance examiner. This class of work provides one of the few circumstances in which a physician's work is checked immediately by another medical observer. Such review naturally serves as a stimulus to the development of keener powers of observation and greater detailed care in history taking and the recording of physical findings.

Probably the greatest advantage accruing to the conscientious physician who makes a considerable number of life insurance medical examinations is the opportunity for chest examinations of presumably healthy individuals. What better training for quickly recognizing the physical signs of chest pathology could any physician have than to examine thoroughly and study a considerable number of life insurance applicants?

The medical director of a life insurance company depends upon his medical examiners as he would upon the use of his own five senses to obtain the family history, personal history and physical qualifications of a prospective policyholder. The medical examiner expresses an opinion on the longevity of an individual examined, which is based upon his own observations. The medical director, after taking into consideration, among other things, the qualifications of each examiner, bases his opinion of each risk on a study of the examiner's report in comparison with the mortality experienced in a very large number of insured lives falling within a similar average group. To the interested examiner this contact with the medical director also opens an avenue for increased knowledge of prognosis based on the director's wide statistical experience.

Many life insurance companies are making a splendid contribution to public health and sickness prevention by offering periodically, free of cost, health examinations to certain of their policyholders. This new service, while but in its infancy, already offers additional opportunity for increased earnings and impressive work by local life insurance examiners.

In the larger cities, years of experience by certain physicians as life insurance examiners has in many instances resulted in the devotion of most of their time and talent, on a fee basis, to this particular phase of medical practice. In some instances the larger companies have established in their larger agencies a full-time medical examiner on a salary basis. The opportunities for many physicians to serve as examiners will always be plentiful, however, and we commend to the younger men of the profession the development of connections with representative life insurance companies early in their professional career.

The advantages to a physician of work in the life insurance examination field may be briefly summarized as follows:

1. Fair fees promptly paid.
2. Ethical broadening of acquaintance.
3. Stimulus to accurate history writing and recording of physical findings.
4. Opportunities for examining presumably physically unimpaired persons.

Walter F. Donaldson, M.D.

Pittsburgh, Pa.

BUBBLES

A bill in time saves nine.

A dollar in bank is worth two on your books.

Education is the backbone of civilization; just now it needs its spine adjusted.

The only bad debtor is a dead debtor.

About the only kind of insurance we don't have is vacation insurance. Some enterprising company might be surprised to see how popular that would be with the hard-working doctor.

Osteopathic surgeons may be all right—if they don't cut up too much.

An efficient secretary is worth her weight in gold.

Wonder how the Doctors of Optometry will distinguish their D. O. from the one that belongs to the Doctors of Osteopathy?

It seems that Workmen's Compensation isn't going to be Doctors' Compensation yet awhile.

The longer a bill stays on your books the longer it will stay out of your pocket.

Will Insulin insulate the diabetic?

We wonder if the recent political ferment in Bulgaria might be due to the intake of too much Bacillus Bulgaricus?

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

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PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since May 21st. Figures in first column indicate county society numbers; second column, State Society numbers.

May 22	Chester	70–72	7097–7099	$15.00
25	Luzerne	230	7100	5.00
28	Tioga	28	7101	5.00
	Fayette	115–116	7102–7103	10.00
29	Beaver	63	7104	5.00
June 2	Juniata	12	7105	5.00
	Elk	22–24	7106–7108	15.00
6	Blair	86	7109	5.00
9	Northampton	135	7110	5.00
	Lackawanna	224–228	7111–7115	25.00
	Blair	87	7116	5.00
16	Lackawanna	229–232	7117–7120	20.00
	Lancaster	115–116	7121–7122	10.00
	Washington	212	7123	5.00
18	Northampton	136–137	7124–7125	10.00
	Philadelphia	1874–1924	7126–7176	255.00
	Allegheny	1223–1231	7177–7185	45.00

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to June 20th:

ALLEGHENY: *New Member*—A. Pauline Baker, 7725 Hamilton Ave., Pittsburgh. *Removal*—Charles W. Allen from Tarentum to Renfrew (Butler Co.); John A. Boyd from Pittsburgh to Christiana (Lancaster Co.). *Transfer*—Forrest L. Schumacher, of St. Francis Hospital, Pittsburgh (formerly of Dubois), from Jefferson County Society. *Deaths*—Charles Sohn, of Pittsburgh (Bellevue Hos. Med. Coll., N. Y., '90), May 22, aged 62; Alice M. Fasold, of Pittsburgh (Women's Med. Coll., Phila., '20), killed in automobile accident, May 31, aged 28.

ARMSTRONG: *Removal*—Arthur R. McNeil from Cadogen to Brookville (Jeff. Co.); Charles A. White from Dayton to Arcadia (Ind. Co.).

BERKS: *Death*—Fremont W. Frankhouser, of Reading (Jeff. Med. Coll., '80), May 23, aged 67.

CLEARFIELD: *Removal*—Samuel Stalberg from Boardman to 2769 Lancashire Road, Cleveland Heights, Ohio.

ELK: *New Member*—N. M. Daghir, Dagus Mines.

FAYETTE: *Reinstated Member*—Edgar K. Wells, Masontown. *Removal*—Chester B. Johnson from Mt. Braddock to Allison.

INDIANA: *Removal*—J. Huston Johnson from Waterman to E. Downingtown (Chester Co.).

LACKAWANNA: *New Members*—J. J. Carroll, 1309 Jackson St., Scranton; M. V. Sarine, Jermyn. *Reinstated Members*—John J. Loftus, Old Forge; William J. L. Davis, 814 Mulberry St., Scranton.

LANCASTER: *Deaths*—Jacob R. Lehman, of Mountville (Jeff. Med. Coll., '82), May 9, aged 68; Ambrose J. Herr, of Lancaster (Jeff. Med. Coll., '61), May 27, aged 85.

ERIE: *Expelled*—Ellen Walker-Berry, of Erie.

MERCER: *Transfer*—John M. Jamison, Grove City (formerly of Pittsburgh), from Allegheny County Society. *Resignation*—Frederick C. Potter, of Akron, Ohio, formerly of Mercer.

NORTHAMPTON: *Removal*—John A. Lentz from Northampton to 1315 Polk St., San Francisco, Calif.

PHILADELPHIA: *New Member*—Mabel H. Pearson, 6118 Germantown Ave., Philadelphia. *Death*—Francis H. Elder, of Philadelphia (Univ. of Penna., '81), May 9.

SUSQUEHANNA: *Death*—Homer B. Lathrop, of Springville (Univ. of Penna., '78), April 9, aged 67.

UNION: *Death*—William E. Metzgar, of Allenwood, April 27.

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg

LEGISLATION

The session of the Legislature of 1923 has come to a close with the adjournment of House and Senate on June 14th.

From month to month we have brought to the attention of the medical profession of the state, bills which have been of importance. Now that the transactions of the Assembly have become a matter of history, a résumé of the bills introduced and their final disposition may be of interest. We, therefore, present the following:

SENATE BILLS

No. 16, an act to prevent fraud and deception in the manufacture and sale of adulterated foods, passed the Senate and House and was approved by the Governor April 26th.

No. 19, an act to prevent fraud and deception in the manufacture and sale of adulterated ice cream, passed both houses and was approved by the Governor March 20th.

No. 95, known as "the filled milk bill," passed both houses and was approved by the Governor March 21st.

No. 242, the act to regulate examination and licensure of Osteopathic surgeons and to create a board for examination and licensure of the same, was amended in the Senate, and passed that body May 16th. Certain amendments were offered by the Chairman of the Committee on Health and Sanitation of the House, which were not accepted by that Committee. The bill was passed finally by the House on June 13th, as amended in the Senate, and was approved by the Governor.

No. 515, an act to regulate and standardize clinical thermometers, passed the Senate and died in the Committee on Public Health and Sanitation of the House.

No. 554, an act regulating the practice of medicine and surgery, and giving the right to the Bureau of Medical Education and Licensure (now the Board of Medical Education and Licensure) to reinstate licenses in certain cases, is in the hands of the Governor.

No. 586, known as "The Code," changes the name of the Bureau of Medical Education and Licensure to the State Board of Medical Education and Licensure, and provides for the appointment of five members, as in the present law, and two ex-officio members, who shall be the Superintendent of Public Instruction and the Secretary of Health (now the Commissioner of Health). Under the present law, the Bureau provides a salary of $1,500.00 per year per member of the Board, except the ex-officio members, which has been changed by the Code to $15.00 per diem. An effort was made by the Chairman of the Committee on Public Health and Sanitation of the House to amend the bill, allowing the present salary feature to remain. The amendment was not accepted. The Code bill passed both houses and was signed by the Governor June 7th.

Nos. 685 and 686, relating to the Board of Examination and Registration of Graduates of Training Schools for Nurses, also the re-registration of all licensed attendants, were both signed by the Governor.

No. 762, an act to safeguard human life and health by providing for reporting and control of communicable diseases, is an amendment to the present law relating to the same, and is in the hands of the Governor.

No. 786, known as the "skimmed milk bill," which provides that no condensed skimmed milk shall be offered for sale in containers of less than five pounds, passed both houses and is in the hands of the Governor.

House Bills

No. 36, an act to regulate the practice of Chiropractic and to provide for the appointment and maintenance of the Board of Chiropractic Examiners, was defeated on the final passage May 8th, reconsidered on May 15th, and again defeated on final passage May 22d. No further action could be taken on this bill during the session.

No. 62, the antivaccination bill, was never reported out of the Committee on Public Health and Sanitation.

No. 72, an act to establish county hospitals for the treatment of tuberculosis, was approved by the Governor April 3d.

No. 164, an act to make it unlawful to pollute the waters of the state, was not reported out of the Committee on Health and Sanitation.

No. 255, a bill which would allow the Board of Medical Education and Licensure to create a department for investigation and prosecution of illegal practitioners, was recommitted to the Committee on Public Health and Sanitation, and never reported out.

No. 248, the nonmedical technicians bill, was recommitted to the Committee on Public Health and Sanitation and no further action taken.

No. 295, an act to make a burial permit issued at the place of death, valid throughout the commonwealth, was dropped from the calendar.

No. 362, an act to authorize any school or college of optometry to confer a degree of Doctor of Optometry, was approved by the Governor April 23d.

No. 395, a bill to regulate the sale of caustic acid and caustic alkali preparations intended for household use, passed both houses and was approved by the Governor May 7th.

No. 433 was an amendment to the present law to increase the time during which unclaimed bodies are held by the authorities, from 36 to 72 hours, before sending them to the Anatomical Board. This bill passed the House but was not reported out of the Committee on Public Health and Sanitation of the Senate.

No. 846, an act to clarify the provisions of the Workmen's Compensation Act as it related to the compensation to physicians and hospitals, after being referred many times for errors in printing, and after delays in the committee to which it was referred, was finally re-reported as amended June 6th. It passed second reading June 12th, too late to be finally passed by the House and Senate, and was dropped from the calendar.

No. 998, an act to accept the provisions of the Sheppard-Towner Act of Congress, by appropriating $62,500 in order to receive a like amount from the United States Government, provides for instruction of maternity cases as to hygiene and sanitary welfare. The resolution passed by the House of Delegates at the Scranton Session was presented to the Chairman of the Committee on Health and Sanitation of the Senate, which resolution voiced the sentiments of the medical profession of the state. Pressure by all the women's organizations of the state compelled the final passage of this bill, which was approved by the Governor May 28th.

No. 1075, known as the mental health bill. An effort was made to amend the section in relation to the examination of mental patients so that an Osteopathic practitioner would have the right to make such examination. This effort was made in both the House and Senate, but without avail.

There has not been a session since 1915, when so many bills affecting the medical profession have been presented to the House and Senate. It has been a most difficult session in which to observe legislation and effect the passage of meritorious bills or defeat those objectionable to organized medicine. In the final hours of the session much feeling has been expressed relative to medical legislation, and it is hoped that the entire profession of the state will realize the difficulties with which the Medical Legislative Conference has contended during the Session of 1923.

COMMUNICATIONS

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: In view of the timeliness of the subject, will you please publish the following report, read before the Philadelphia County Medical Society, June 13, 1923:

VITAL POINTS FOR THE PHYSICIAN CONCERNING THE COMPENSATION LAW*

The Workmen's Compensation Law has given rise to endless discussion of its various provisions on account of the many interests concerned. These include the labor chiefs, the employer, the employee, the physician, the hospitals and the representatives of the employer—the insurance carriers. The labor chief considers the law from the standpoint of the laboring man and makes every effort to obtain a reasonable portion of his salary after the accident period. The employer wishes the interests of the employee safeguarded so that he can be returned to his occupation in the quickest possible time. As a result of the protection of the employee demanded by law, a new interest arises—the insurance company which represents the employer. If on the other hand, the employer has no outside agency to protect him, he then becomes a self-insurer. Finally the hospital and the physician complete the chain.

There have been many accusations made against physicians, pertaining to their honesty and the honor of the profession as a whole. These imputations are much exaggerated. Thus, a statement recently made that more than one-half of the profession are padding their bills, cannot go unchallenged. The number of physicians who are supposed to transgress is about 20%. This number we are sure is still too large and could be eliminated if the names of these physicians were placed before a committee of the Board of Directors of this society. The writer has asked repeatedly for a list of the names of these transgressors, but up to the present writing has not succeeded in securing them. Admitting the charge, it does not seem a sufficient reason for the wholesale cutting of bills by insurance companies. This pernicious practice no doubt has encouraged some physicians to pad their bills. The reduction of the physician's bill is done without his consent. The only redress he has is to place his claim before the Compensation Board, which generally decides in favor of the physician, and justly so. Therefore, we would advise all physicians who have had their bills reduced to present their claims to the Compensation Board for adjustment.

The physician has been accused of incompetence in the treatment of industrial cases. We know as a fact that the utmost care is always taken of these cases. Sympathy for the injured is always shown by the surgeon. The statement has specifically been made that the small wound is the one that has given the insurance company the most concern. Curiously enough, in the writer's experience, the badly infected cases come from the large plants which usually employ a full-time physician. This is not said in a spirit of criticism, because we all know that the utmost care is taken by these physicians to prevent infection; but it must be borne in mind that there are many extraneous factors causing infection, over which we have absolutely no control.

Special reference has also been made concerning the ultimate recovery in fractures. It is impossible to obtain a 100% result in all fractures. There is no class of case in the entire category of medicine that requires more experience and greater mechanical skill to obtain a perfect result.

The question more frequently asked than any other is whether the employee can choose his own physician. According to the law he cannot without the consent of the employer or his representative, namely, the insurance company. Even if the employer prefers a certain physician, the insurance company will dictate to him the physician he shall employ. The patient's inalienable right to select his physician has been taken away by the enactment of the compensation law. Thus an additional obstacle has been placed by the insurance company to prevent the physician most interested in the patient from treating him. A letter has been sent by some insurance companies, apprising the employee of the fact that they are fully capable of treating him, and asking the patient to come to their clinic for further treatment. It cannot be questioned that there is a time when the family physician is fully able to take care of the industrial case. The same rule of ethics should obtain in an industrial case as in any ordinary accident case. There ought to be no discrimination. In case of accident not due to industry, if admitted to a hospital, the patient is always referred to his family physician. In this instance, as in many others, there seems to be a disposition on the part of the insurance companies to encourage the enmity of the profession instead of fostering their good will. It is fully understood by all that the law has favored one interest only, namely, the insurance companies. This is exemplified by the fact that from time to time they have declared large dividends. On the other hand, the companies will have one believe that they are doing a charity. How can they reconcile this claim with the report of their yearly statements?

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*The new bill and its amendments reached the calendar of the House of Representatives, but on account of the adjournment of the Legislature a vote could not be taken on this measure. We are, therefore, working under the law of 1919.

The writer has reviewed the law in other states in regard to the relation of the physicians to the compensation law. In answer to certain inquiries concerning the status of the physician in relation to industrial cases in hospitals, we received letters from New York City, Boston, Baltimore and Cleveland. In the cities mentioned, the physician is fully compensated for services rendered to these cases, and furthermore is fully protected by the boards of managers in collecting his fee, even though these cases have the status of a ward case. Some hospitals, insurance companies and others fail to realize that a new class of patients has been established; that these industrial cases are really private in character, and therefore should receive the same attention as private cases should receive. Patients who come under the Workmen's Compensation Law are not ward patients and cannot be put in the same category. The mere fact that the hospital charges for the use of the operating room, x-rays, tetanus antitoxin and other special drugs, places these cases in a special class. No such charges are made for ward cases. Pennsylvania is practically the only state in the Union having compensation laws, where the physician is not compensated for his services rendered to industrial cases which enter hospitals.

The law as framed in 1919 was perfectly clear to those who wished to understand its intent. There would have been little necessity for a change in the present law had the insurance companies abided by their agreement. The old law which prescribed a $25 and $75 limit for services performed over a period of two weeks was found inadequate and the act under which we are now working was framed. This allows $100 for hospital services and supplies, and if interpreted correctly, an additional $100 for the services of the physician or surgeon for a period of thirty days. It was never intended by those in conference when the law was framed that the doctor should not be paid.

The Committee of the Philadelphia County Society on Workmen's Compensation has given this subject considerable thought. It has endeavored to arouse the profession of Philadelphia and every county in the state to a realization of the importance of legislation favorable to the physician. A petition was first circulated to be signed by the members of the various societies which meet in this city. This was found inadequate on account of the comparatively small attendance at these meetings. The petition was followed by a letter with an enclosed postal card petitioning the legislature to pass laws which would protect the physician. The efficacy of this method was confirmed by the fact that over 1,500 cards were received by our executive secretary. These were then sent to Harrisburg to be presented to the Committee on Insurance ot the House of Representatives. This propaganda was transmitted to every secretary of the county societies in the state. The response was universal. The component societies immediately signified their willingness to help. Not satisfied with these expressions of support, two more letters were despatched to remind the secretaries of the county societies that the cause had not yet been won, but that the senators and representatives must be interviewed to give their support to our cause. Again, a fortnight ago, when the bill with its amendments seemed to be in a precarious position, another letter was despatched from our office apprising the various secretaries of the conditions confronting us and urging them to do their utmost in order that we might win the members of the Legislature to our cause.

In addition to this correspondence the committee, in conjunction with some of the members of the Medical Legislative Conference, journeyed to Harrisburg to protect our interests. The original bill, as presented to the legislature, was objected to by the so-called self insurers because no time limit was placed on the length of disability or the amount to be charged. Our committee felt that objections would be filed to the bill as drawn; it was difficult to conceive how it ever reached the third reading in the House. Curiously enough the general insurance companies filed no objections, but a new factor entered the field—the self insurers. These comprise organizations of the P. R. T., P. R. R., U. G. I., and the Atlantic Refining Company. They asked for a hearing before the committee of the House. This was granted. Arguments were heard from both sides, but no agreement could be reached. A few days later a conference was held with the representatives of the self insurers. The spokesman for the self insurers agreed to several amendments which allowed the doctor and the hospital each to receive $100 for their services, board and supplies; also that the doctor should be a "party in interest," which means that he would have a right to bring suit. Finally a subcommittee of the House was appointed to meet our committee and that of the self insurers. We again journeyed to Harrisburg. At this conference the representatives of the self insurers would not agree to any of the amendments except the one referring to the physician being a party in interest. Not being able to come to an agreement, we decided to allow the original bill with the amendments to be brought out of the committee for a final vote.

The experience derived from this committee work illustrates the fact that there must be a united profession if we wish to seek legislation favorable to our cause. This work ought not to be put on the shoulders of a few, as suggested by Dr. A. C. Wood, one of our committee, there ought to be established a central bureau with branches all over the state, the business of these branches being the placing of the problems pertaining to compensation work before the central bureau.

Senator Copeland of New York, speaking before the Medical Club about two weeks ago, stole some of my thunder. With the Senator, I hold the same views concerning the election to office of more physicians. It is another solution of the problems that confront the physicians of this state. A survey of the doctors throughout the state should be taken to determine who of these would be willing to serve in either branch of the legislature. In the words of Senator Copeland, it is neither "grotesque" nor is it "incongruous" for a physician to hold office. My feeling is that in the future physicians will seek these positions of honor.

The other alternative would be to prevent the reëlection of members who persistently oppose measures in which physicians are interested.

In conclusion, the writer feels that he cannot better emphasize the points of the preceding paragraphs than by referring to an article of Dr. Louis D. Wilson, which appeared in the *Literary Digest* for May 26, 1923. In it he says, "Rarely do physicians of sound judgment seek election to state legislatures. Or if they do it is a half-hearted manner and without adequate support from the other members of their own profession. As a result we have the spectacle yearly of state legislatures perpetrating the most assinine legislation in relation to health, to medical licensure and to education. In the meantime the legislative committees of state medical societies in their reports annually deplore the legislative actions taken and express futile hopes for improvement in the future. The way for physicians to get for the community sane health, licensure and educational legislation is to take a hand directly in its making."

Moses Behrend, M.D., Chairman,
Committee on Workmen's Compensation,
Philadelphia County Medical Society.

THE PRESENT STATUS OF ENDOCRINE THERAPY

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: In his interesting article on the above subject in the June number of The Atlantic Medical Journal, Dr. B. A. Cohoe writes as follows: "We find the physiologists at odds among themselves with respect to the various hypotheses promulgated, and as a class, at times, pitted against the clinicians whom they accuse, frequently with right, of imaginative speculations and audacious therapeutic procedures. This state of affairs is due to the fact that no fixed principles have as yet been established concerning the physiology of the endocrine glands, and that almost any statement made to-day regarding their function may to-morrow require qualification."

Permit me to recall in this connection another paper published last year in the *Lancet* of August 12, 1922, in which the prevailing knowledge concerning the functions of the endocrine organs is summarized by Swale Vincent. According to this physiologist, the adrenal medulla appears to be of no importance, the function of the adrenals being "probably wrapped up" in the cortex. The thyroid, he suggests, may serve to increase the "flexibility of energy output"; the parathyroids would seem to keep low a toxin in the blood, "probably guanidin." As to the pituitary, recent experiments suggest the probable need of "a reconsideration of our whole attitude in relation to the pituitary body." The thymus may be antitoxic, but no reliable evidence indicates that "mors thymica is due to abnormality of the thymus." As to the interstitial tissues of the gonads and the islets of Langerhans, the evidence that they provide an internal secretion is "by no means convincing."

It would be well for my colleagues of the clinical field to realize that this is the product of the nearly seventy years' efforts by physiologists to identify the functions of the ductless glands. Would such insignificant results during such a period in any other walk of life not be characterized as a failure, and warrant any reasonable hope for the future? R. G. Hoskins referred to this group of workers as being desirous of keeping medicine "pure and undefiled," but as he states, "efforts aimed merely at purity have not infrequently as their most significant end result sterility."

Endocrinology as it is interpreted by physiologists today is the sole underlying cause of the "utter disrepute" towards which they deem this newer branch of medicine to be drifting, for the vagaries they criticize are but efforts to compensate by guesses and a variety of groundless premises for light that they have failed to furnish. Even the random use of organic extracts is traceable to them, for it is obviously impossible to administer any such agent rationally as long as the functions of the organs from which they are derived remain unknown. The truth of the matter is that it is the endocrinology of physiologists which is falling into disrepute, and the sooner clinicians realize this fact the better it will be for sufferers, their main concern.

I have long urged that domination by any one branch of medicine, an auxiliary one such as physiology in particular, was fatal to progress, and time has shown that a spirit of justice to all branches, with harmonious coöperation of all workers as invariable principle could add much to our efficiency in the sick room. Finally, our profession is suffering greatly at the present time owing to the phenomenal development of cults as a result mainly of the therapeutic nihilism which flourished in all its glory two decades ago. Caution is necessary at the present time lest the "pure and undefiled" again prevail with "endocrinologic nihilism" and sap a line of thought capable of great good for the welfare of all concerned. Very truly yours,

C. E. de M. Sajous.

Philadelphia, Pa., June 14, 1923.

AMERICAN MEDICAL AID FOR RUSSIA

(medical section american friends service committee)

June 12, 1923.

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: An earnest effort is being made by the American Medical Aid for Russia, the Medical Division of the American Friends Service Committee (Quakers), to collect money, clothing, instruments, books and journals for our medical colleagues in Russia.

The condition of these men is deplorable. Removed happily by nature of their profession from the political disturbance, they have suffered doubly from the troubles of the last six years in that, while the demands for their assistance have multiplied immensely, they have been almost deprived of medical supplies, indeed, even of the necessities of life. They not only lack the barest necessities of food and clothing, but are terribly in need of drugs, medical and surgical instruments and of scientific books and journals in English.

The Quakers are in a position to assure American physicians who are willing to assist their Russian colleagues, that contributions will be promptly and efficiently distributed in Russia. Literature will be distributed in coöperation with the Russian Health Department through notices printed in the official bulletin, to the effect that medical literature in English is available and can be had on request. The Quaker relief workers will directly supervise the distribution of this material to Russian hospitals, medical schools and individual physicians.

If every one of us would make his personal effort to help send such money and clothes as he can, to send files of journals which he does not use himself, as well as such medical books and instruments as he can spare, it would be an immense help.

It's not a charity; it's a duty.

Yours sincerely,
W. S. Thayer,
103 Park Ave., New York City.

Warehouses located at 108 Dobbin St., New York City, and 1521 Cherry St., Philadelphia.

Dr. O. Pine queries: How little encouraging to further endeavor on the part of one who has prepared for your mental entertainment a worthy paper on an important subject is a perfunctory, lukewarm, polite handclapping coupled with no discussion? Can you censure this brother for failure to provide any future contribution, and can you not realize that he cannot rise to his highest peak, unless you help him climb?

COUNTY MEDICAL SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Perry Clare Smith, M.D., Ambridge.
Bedford—N. A. Timmons, M.D.,Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—C. L. Stevens, M.D., Athens.*
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—Sylvester J. Lackey, M.D., Clarion.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Samuel G. Logan, M.D., Ridgway.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydson Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.

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* Deceased.

Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—John C. Bucher, M.D., Lebanon.
Lehigh—Victor J. Gangewere, M.D., Allentown.
Luzerne—H. Irvin Evans, M.D., Ashley, Pa.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—William R. Levering, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—F. Gurney Reese, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—Percival J. Herman, M.D., Selinsgrove.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert D. Mackey, M.D., Montrose.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—W. J. Walker, M.D., Greensburg.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Gibson Smith, M.D., York.

July, 1923

COUNTY SOCIETY REPORTS

DAUPHIN—JUNE

The Dauphin County Medical Society held its annual clinic June 5th at the Harrisburg and Polyclinic Hospitals as its final meeting before the usual summer recess.

At the Polyclinic Hospital Dr. H. F. Gross demonstrated three interesting surgical operations from 10 to 12: excision of a strawberry gall-bladder with a suspected malignant tumor attached; a cesarean section of a full term pregnancy in a nephritic primipara (although five convulsions followed the operation, the mother and child made a rapid recovery) and a trachelorrhaphy and perineorrhaphy.

At the Harrisburg Hospital from 8:30 to 11 a.m. Dr. H. F. Smith operated on eight cases, among which were two cholecystectomies, an abdominal hysterectomy, a right inguinal hernia, application of radium for carcinoma of the rectum, and an osteology of arm for osteomyelitis. In the afternoon Dr. G. B. Stull repaired a fractured patella. Dr. J. B. McAlister presented and discussed acute rheumatic fever and its complications. Dr. D. S. Funk gave an illuminating talk on appendicitis and pyelitis in children, emphasizing the special points in diagnosis gleaned from his own experience, such as the absence of chills in pyelitis, the dearth of positive signs on physical examination, and the necessity for repeated urinalyses to detect pus. Dr. H. B. Walter and Dr. R. J. Miller demonstrated some fractures with unusual features. Miss Alice M. Morse gave a short discussion on the nursing problem. This completed the morning program and a buffet luncheon was served to the members.

In the afternoon Dr. J. F. Culp covered in a scholarly manner the subject of mastoid disease, from the intricate anatomy to the technique of treatment, warning against procrastination in surgical interference when external measures have failed to bring relief promptly. Several cases were on hand for inspection, presenting complete relief from symptoms and a most satisfactory cosmetic result. Dr. Culp demonstrated incidentally a case of carcinoma of the external ear that had been treated by radical removal and electrocauterization. Dr. J. W. Park had several eye cases of interest. Drs. C. S. Rebuck, G. L. Dailey and H. H. Farnsler held a highly instructive ear, nose and throat clinic. Dr. A. Z. Ritzman illustrated with slides quite a variety of x-ray conditions met with in the hospital and in his private practice. Dr. N. B. Shepler reported several cases of abdominal pregnancy, and Dr. Carson Coover discussed several orthopedic and fracture cases with x-ray demonstration. Dr. C. P. Faller gave a short talk on nitrous oxid and oxygen anesthesia during the morning operative clinic. Dr. G. R. Moffitt and Dr. L. W. Wright explained the technique and interpretation of many laboratory procedures, including the gold sol. curve, blood sugar estimation, pathological sections and the Wassermann reaction.

A business meeting concluded the program, which from its wealth of material and its skillful preparation and presentation impressed the members of the Society and visitors with the inestimable value of hospitals as centers of medical education, whose resources are always open to those that wish to take advantage of them.

W. M. Kunkel, M.D., Reporter.

ERIE—JUNE

The Erie County Medical Society met June 7th and was addressed by Dr. Robert B. Osgood, Professor of Orthopedics at Harvard Medical School. His subject was "Background of Orthopedic Surgery and Its Present Purposes." Dr. Osgood spoke as follows:

The history of what we understand as orthopedic surgery to-day begins with the history of medicine, and I have found the small part of the story which I know a fascinating one. I am glad also to try to outline what I believe is the present purpose of orthopedic surgery, speaking without authority, but with a firm conviction that it has a purpose.

Let us, then, start with the mythical father of medicine, Æsculapius, whose sons Podalius and Machaon become celebrated in the Homeric poems for their skill in treating the wounds of the Greek soldiers. Religion and speculative philosophy and medicine were all bound together then, and the priestly Order of Æsclepidæ built the Temples of Health and sought, without much record, to transmit the healing arts which they learned. In the Temple of Cos, Hippocrates served as a priest and began to record his knowledge, so that modern medicine really began with his writings nearly two thousand years ago. It is surprising to find how much attention Hippocrates devoted to extremity surgery and the group of congenital deformities which are the foundations of orthopedic surgery. In the two-volume edition of his works which I possess, half of one of them is devoted to bone and joint surgery. I wish to read you a few quotations from the writings of Hippocrates which are almost discouraging. They show how little we have added to his knowledge in two thousand years. In discussing fractures he says:

"The splints are to be smooth, even and rounded at the extremities, somewhat less all along the upper bandages and thickened at the point to which the fracture inclines. Those parts where there are tuberosities and which are devoid of flesh, such as the ankles or fingers, we must guard from the splints which are placed over them. The gutter-like splints should rather comprehend the whole limb than the half of it."

"The presentation of the injured part to the physician, the extension, the arrangement, etc., are to be regulated according to nature, but what is nature in these operations is to be determined by the accomplishment of the object which we have in view, and for this purpose we must look to the part in the state of rest, in its middle state, and to habit. In regard to the state of rest and relaxation, as in the arm, that it be in line with the hand; and with regard to the medium between flexion and extension, that the forearm be at right angles to the arm. With regard to habit, it should be considered that some limbs bear certain positions preferably, as for example the thighs, extension; for in such attitudes the part can best bear to be placed without a change of posture."

"The extension (traction) should be most powerful when the largest and thickest bones or when both bones are broken. Suspending of a fractured limb in a sling, the disposition of it and the bandaging, all have for their object to preserve it in position. The principal considerations with regard to position are habits and the peculiar nature of each of the limbs. The varieties are shown in running, walking, standing, lying, action, repose."

"In treating parts which are atrophied, we must comprehend a considerable part of the sound part of the limb with the bandage, so that by the influx thereby produced, the wasted part may acquire a supply of blood greater than its loss."

Do you hear Thomas advocating this damming of the part, and Bier talking of his passive hyperemia? Here we have most modern conceptions of treatment and of functional considerations. One other example, Hippocrates' description of the dislocation of the hip joint, is perhaps more complete than that of any ancient or modern writer, and in his description he includes congenital dislocation and dislocations as a result of disease. His chapter on club foot states correctly the true nature of the malformation and gives most rational methods of treatment for rectifying the deformity in early life. He then emphasizes the necessity of retaining the correction for a long time after a cure has been effected. He describes an apparatus which may well have been the inspiration for the formerly much employed Scarpa's shoe.

We often wonder that osteopathic manipulations of considerable violence do so little harm, but Hippocrates appreciated the comparative safety of energetic manipulations of the spine. For instance, advising treatment for scoliosis, he says in relation to manipulation: "The method of applying force is particularly safe and it is also safe for a person to sit upon the hump while extension is being made and to raise himself up, to let himself fall again upon the patient."

We must pass over some 1500 years of darkness lighted by a few bright medical torches and watch a great French war surgeon, Ambroise Paré, at work. Paré lived from 1510 to 1590, and served under several French kings who were nearly always at war, thereby having a long war experience. He fought for the elevation of the trade of surgery to a place by the side of the profession of medicine, and in a great measure won his fight. He recognized the potential seriousness of joint injuries and the importance of drainage. He looked to future function and realized that the ligaments and tendons must be conserved. He appreciated the atrophy of disuse and the value of early motion. He devised many excellent open splints for the treatment of fractures. Paré caught a glimpse even of the antiseptic era as he poured boiling oil into the wounds of soldiers, and after this crude and painful but fairly efficient cleansing, watched them heal without fever or constitutional symptoms. More than these specific contributions, he left us two great surgical axioms: "The surgeon may dress the wound but God must heal it;" and the other that "The first duty of the surgeon is to do no harm (*primum non nocere*)."

Even in Paré's time the French were beginning to think of preventive medicine, and the Latin poem entitled, "Pædatrophia," by Sainte Marthe, appeared in 1584, upon the manner of bringing up and nourishing young children.

It is not until 200 years later in 1741, however, that we find the aged Dean of the Faculty of Paris and Professor of Medicine of the University of Paris spiritedly defending his thesis on the Art of Preventing Deformity in Children. This is Dr. Nicholas Andry, who published his two-volume book, "Orthopædia," when he was 81 years old. He coined his word without too meticulous an attention to the rules of philology from the Greek words *θρθός.* meaning straight, and *Παι Sίον*, a young child. If we take liberties ourselves and derive the word "orthopædic" from *θρθὸs* and the verb *Παι Sέμω* to educate, which has the same root, we have perhaps as satisfactory a definition of the past and present effort of orthopedic surgery as we can ask. Our fathers have certainly been trying and *we* are *still* trying to "educate straight." There seems to be still plenty of crookedness to warrant the continuance of our efforts.

Andry considered the scope of Orthopædia to be very wide, including the deformities of the teeth, dumbness, stammering, the deformities of the skin, and the faults of the complexion. The headings of many chapters, however, are extraordinarily like the titles of certain medical articles of to-day. For example, "In what posture young girls ought to sew, read, etc.," and again, "The means of preventing the bellies of children from projecting too much forward, and how to keep their backs straight. How they ought to sit to produce this effect; particular seats for this purpose." Andry teaches the correct posture in walking by making the children balance objects on their heads. He overcomes contractions of the calf group by making his patients walk up hill. He corrects an early wry neck by prescribing positions in which the child shall be laid by the nurse to overcome the contraction. If he prescribes for one "a bucket of tripe broth moderately warm" and for another a liniment made out of oil of worms, we may be reasonably sure that it is only a tactful concession to the fanciful but well-established therapy of his day and not because he has great faith in the efficacy of these external applications.

An amusing instance of Andry's faculty of observation and his resourcefulness is recorded in connection with a case of torticollis in a young girl. He had tried, without much success, to rectify the condition by means of exercises. One night the child was taken to see an exhibition of fireworks and it happened that she was so placed that she could observe the spectacle only by turning her head away from the position of her deformity. Her eagerness to witness the spectacle was so great and her efforts so violent that the next day Andry observed an almost complete correction of her wry neck. A case presenting a similar deformity soon consulted him, and impressed with the result of the former child, he arranged for another exhibition of fireworks and deliberately had this second child placed like the first, with equally satisfactory results. The prevention and cure of deformities by means of exercise was thus advocated by Andry, and while his methods were often crude and not always efficient, he emphasized a great principle, the importance of which has been recognized ever since. He gave the name to the special branch of surgery we are discussing.

His contemporaries were the anatomist and surgeon, Jean Pierre David of Rouen, born in 1737, and dying in 1784, and the great John Hunter of England, who was born a few years before David and died a few years later. David recognized that exercise and motion were not a cure for all bone and joint conditions and that rest was often a more potent factor than either. We find him advocating recumbency in caries of the spine and attempting to discover the indications for these two opposite methods of treatment. Hunter spent ten years in the dissecting room, served as an army surgeon for three years, struggled for existence in London for five years, and then attained prosperity, which he enjoyed for ten years. Hunter, like Paré, taught that the restoration of function was chiefly brought about by powers within the living tissues themselves. He actually worked out a system of physiotherapy based upon these inherent powers plus the patient's will to recover. Occupational therapy, of which we hear so much, began with Hunter 250 years ago.

Before Hunter died, Jacques Delpech was born in Toulouse, and after studying in Montpellier, became Professor of Surgery of the extraordinarily productive Montpellier School. Sir Arthur Keith considers Delpech the virtual founder of orthopedic surgery. An anatomist, an embryologist, a physiologist, and a surgeon, in 1829 he published l'Orthomorphie when he was only a little over forty. Clearly written and exquisitely illustrated, it remains a monumental work. Like Hunter, his methods of treatment were based on the action of the healthy living body. He appreciated the importance of muscle tone and postural tonus, and realized that deformity occurred when the normal muscle balance between antagonistic muscle groups was for some reason disturbed.

In l'Orthomorphie are to be found illustrations of a little palace hospital which Delpech succeeded in building in the beautiful country about Montpellier. In lovely gardens were erected all sorts of exercising appliances and his lady patients, arrayed in the most fashionable bloomers, enjoyed nature while they were being cured of their deformities. It was on the road to this orthopedic hospital that Delpech was murdered in 1832, at the age of 55, by an ungrateful patient upon whom he had performed a radical operation for varicocele.

To Delpech we owe the operation of subcutaneous tenotomy, later popularized by Stromeyer of Hanover. Delpech performed it for the relief of club foot, seeking thereby to relieve the unbalanced condition of the muscles and by this method the entrance of air into the wound, which he erroneously considered to be the cause of the dangerous suppuration which at this time followed almost every open incision.

George Louis Frederick Stromeyer had witnessed Delpech perform his subcutaneous tenotomy and extended the method. He too, after a year in London observing the methods of the English surgeons, founded a modest orthopedic hospital in his native town of Hanover about 1830. It was this hospital that John Little entered for the relief of his own equinovarus, and Little later became the pioneer orthopedic surgeon of England. The immediate result in his own case was so successful and Little was such a loyal exhibitor of his own cure that tenotomies for all sorts of deformities ran riot among the surgeons of the continent and England. Before Little died in 1894, he became convinced of the marked limitations of the method, and in an address delivered in Edinburgh in 1876, he made it clear that most distressing results might follow its indiscriminate employment. After forty years of experience, he came to appreciate the fact that if a muscle could be gradually stretched without tenotomy, it recovered its function better than after a division; that nothing could take the place of infinite patience in gradually correcting deformities, and with the persistence of a lover, wooing function to return.

Within the span of Little's life, Hugh Owen Thomas lived and died. He was born in 1834 and died in 1891, three years before Little, who had retired from practice in 1884. The world hears much more of Thomas since the war than it did during his lifetime, and yet this great descendant of a family of Welsh bone setters was perhaps the closest observer who has ever lived of the symptoms and signs of bone and joint disease. Never in robust health, frail and short of stature, nervous in temperament, of imaginative mind, he broke away from family traditions and the practice of his father and uncle and studied medicine in Edinburgh in the time of Syme, Simpson, Lister and Bennett. When he was twenty-three, he became a member of the Royal College of Surgeons of England, and soon after, began his practice in Liverpool at 11 Nelson Street, in a house which is still the office of his famous nephew and successor, Sir Robert Jones.

Thomas lived in the time of the great London surgeon, John Hilton, whose book, "Rest and Pain," may have impressed him. Certain it is that rest became the sheet anchor of his treatment of bone and joint disease. The mechanical means whereby this rest could be most perfectly furnished to the diseased part was his important concern. In his home he installed a very perfect machine shop and took delight in making with his hands the apparatus which his brain had planned. After twenty years of experience, during which he did much surgery, one of his favorite sayings was that "The blacksmith's hammer deftly used was in most cases a more powerful reparative instrument than the surgeon's knife." What came out of that shop at

11 Nelson Street we now know, and thousands upon thousands of soldiers have consciously or unconsciously blessed Hugh Owen Thomas for ease from pain as the stretcher-bearers on the battlefield applied to their broken arms and legs the splints devised by him. Transport became then a welcome escape easily borne, instead of a hideous nightmare of suffering, ending often in death. The mortality rate was reduced from over 80% to 15% when the stretcher-bearers applied the splints on the battlefields instead of waiting until the wounded were moved, as before.

In America we see the early light of functional surgery, when John Ball Brown of Boston in 1839 opened in a small private house a hospital for the treatment of orthopedic cases. His son, John Buckminister Brown, himself a cripple like Little, became so much interested in this type of surgery that he determined to limit his practice to it. He was the first American surgeon to take this step. A ward was assigned to these cases in the hospital of the Good Samaritan in 1861, and in 1863 the hospital for the Ruptured and Crippled was founded in New York City.

While Delpech and Bouvier, Malgainge, Guerin, Piaraz, Heine, Diffenbach, Langenbec and Thomas were studying these bone and joint cases clinically, and devising methods for their betterment and cure, MacEwen in Glasgow, and Ollier in Lyons, were studying bone growth under the microscope and arriving at diametrically opposite conclusions as to the part which the periosteum plays in the regeneration of bone. MacEwen maintained it played no part and described his ingenious experiments in a book in 1880. They are both right, paradoxical as it may seem, for one considers the periosteum to be only the external fibrous envelope, which has little or no power to build new bone, and the other includes in his periosteum the rich layer of osteogenetic cells which are usually detached with it.

Ollier made experimental physiology the basis of all surgery, and the most of our fundamental conceptions of bone structure and growth and repair come from the Professor of Clinical Surgery of the University of Lyons.

And now when the great minds seemed sharply focused upon this type of surgery, their attention was suddenly withdrawn by the most important medical discoveries of the nineteenth century. Semelweiss, in 1874, had glimpsed it, but his success in reducing the mortality from puerperal fever in Klein's Clinic in Vienna from 12% to 1.5% had driven him from the city because of the jealousy of his chief. His antiseptic for the surgeon's hands and the patient, was chlorinated lime water. It was not, however, till Pasteur in 1850 began his work on fermentation, and applying the information concerning germs, cured the silk worm disease in 1865, that Lister had the vision of aseptic and antiseptic surgery, publishing his first article in 1867.

The immediate success of his methods and the later work of Pasteur on anthrax and rabies left little necessity for further proof of the germ theory. Suddenly the field of surgery became enormously enlarged. Scarcely any part of the body could now cry, "*Noli me tangere*," and most of the active minded surgeons of ability turned their attention to the belief of acute disorders and left the chronic cripple to the brace maker. Before many years he began to be rescued again in America by the powerful personalities of Lewis A. Sayre and Charles Fayette Taylor and others, to whose medical training was added a strong mechanical sense. The jackets and braces applied by them were perfect machines and really accomplished the purposes for which they were applied. Dr. Edward H. Bradford of Boston, also dignified orthopedic surgery, which had fallen to a low estate, by electing to devote his life and great abilities to this type of surgery after a splendid medical and surgical training and with other great opportunities before him.

In Italy also there came a great renaissance, for which Allesandro Codivilla was largely responsible. Codivilla was born in 1851, and at 25 had received his doctorate. He practiced and taught general surgery for many years in different university clinics, making enduring contributions to the surgery of the brain and the stomach. Soon the great untilled field of extremity surgery attracted him and he began to confine his activities to this branch of surgery. He was appointed Professor of Orthopedic Surgery in the University of Bologna and Director of the great Instituto Rizzoli, which post he held until his too early death in 1913. We owe Codivilla more than is generally realized. He perfected the technique of amputations and produced stumps of greater functional adaptability. He studied the pathological anatomy of congenital dislocations of the hips and devised methods of reduction which he practiced successfully and which are still employed. Tendon transplantation became a practical and efficient procedure, largely owing to Codivilla's study. Tendon fixation, tenodesis, was, we believe, originated by him. He was the first surgeon to call attention to the efficiency of osteoperiosteal bone grafts for nonunion of bones, long before, as it is to-day, the method of choice. We owe to him the principle of direct skeletal traction as the best means of overcoming shortening and securing alignment of fragments in difficult fractures.

His personality was engaging and inspiring, his humanitarianism was broad, his ethical principles were high, his skill as a surgeon was recognized and admired by his peers. In Codivilla we have perhaps as perfect an embodiment of a surgeon as we shall find. He added great dignity to orthopedic surgery, as is evidenced by the tribute which general surgery, speaking through Biesalski, paid to the specialty at Codivilla's death. Biesalski said that he had devoted his life to "that art which requires profoundity of knowledge and acuteness and fineness of mind and hand perhaps more than any other branch of surgery." The inspiration of a great character is often shown by its power in stimulating other men to continue and amplify the work which they laid down. Thus Hugh Owen Thomas inspired Sir Robert Jones, and thus Codivilla inspired Professor Vittorio Putti, who as his successor at the Instituto Rizzoli, has not only cultivated the fields which Codivilla tilled, but is constantly enlarging their area and giving us new fruits of his labor.

Now comes the great war. In the early months of 1915, it was evident that the French military medical department needed help, and university units were organized to supply for periods of three months a surgical service at the American Ambulance in Paris. A Harvard unit under Dr. Harvey Cushing and Dr. Robert Greenough was formed in February, 1915, and I was asked to suggest a young orthopedic surgeon for its staff, on the chance that he might possibly be useful in connection with plaster work and apparatus. Egotistically I suggested myself, for I felt sure there would be many problems which would be interesting in connection with the convalescence of war wounds. The experience proved that the only limits to usefulness were those imposed by the necessity of sleep and nourishment and the maintenance of health. Allison of St.

Louis, followed, and was as busy as we had been. Coming back convinced, as some of us were, that it was only a question of time before we should be drawn into the whirlpool, we succeeded in having committees appointed by both the American Orthopedic Association and the Orthopedic Section of the American Medical Association, with Dr. Joel E. Goldthwait as chairman of both. Then began efforts at preparedness by working out lists of necessary supplies and making a canvass of available young orthopedic surgeons of the country who would be ready to go when the call came. Thus it was that when in the spring of 1917, the British Medical Department, through Sir Robert Jones, sent a call for help to their new American allies, Goldthwait was ready to sail in a week with twenty well-trained men. It had already been made clear to Sir Alfred Keough, the Director General of the British Medical Service, that unless the mass of bone and joint deformities flooding the British home base hospital could in the first place be prevented at the front, and in the second place, be corrected when they had occurred, the country would be flooded with hopeless cripples and the man power of the nation dangerously weakened. So he had said to Sir Robert, whose vision and skill he had fortunately recognized, "Take whatever hospitals you need for this special surgical work and man them as you can." But there were no more men in the British Isles trained for this type of functional rehabilitation surgery. Medical men could not be trained for this work quickly, and so he appealed to his American friends and allies.

The surgeons whom Goldthwait brought over were at once given assignments in these special British hospitals and their work began under the great master. Goldthwait went back to America, recruited forty more orthopedic surgeons, secured their commissions and returned with them to England in the autumn when the need again became acute. Among them was Dr. Arthur Davis of Erie.

This noteworthy service was valuable in two ways. It served our allies and it trained as they never otherwise could have been trained, a large group of surgeons who were sorely needed by our own troops later in the war when they were released by the British for work with our own Expeditionary Forces. I know of their service, for I watched them at work during the winter of 1917 and 1918 in the British Isles, and saw their work under Finney and Goldthwait and Allison and Baer in France in the spring with our own troops, and I watched them again after the armistice as they came back to serve in our American General Army Hospitals. You probably know of the great debt we owe to the American Red Cross for the splints. It was formally decided that seven splints would take care of all the fractures. These splints were standardized and made up in quantity and supplied by the American Red Cross.

The supervision of the after care of all bone and joint casualties overseas had been assigned by General Ireland and General Finney to Colonel Goldthwait. A system of radical control was established which made possible a review of nearly all these cases before they were sent home. When I tell you that instead of 40 or 50 per cent of preventable deformities, which in the early years of the war were sent back to England, our bone and joint casualties arriving in America showed less than 10 per cent, you can estimate the efficiency of this service. At first we were quite naturally misunderstood. Orthopedic surgery seemed to be claiming too great a part in the surgery of the war, but as soon as our purposes were appreciated, coöperation became hearty. The experiences of those who traveled about this country visiting the Army hospitals and camps was a most happy one. Petty jealousies were rarely met and most easily overcome. It made no difference what type of surgeon treated these cases, provided only that the methods which had been proved to bring about earliest return of function were carried out.

And we should not close our chapter on the war without paying warm tribute to those surgeons who, because of the need, temporarily at least, left the ranks of general surgery and took the special orthopedic training courses given in different parts of America. Many of them never went overseas, but served in the camps, examining, excluding and rehabilitating the man force of the nation. Their devotion to duty was beyond praise and was recognized by their commanding officers.

I have tried to sketch dispassionately the background of what is called, for lack of a better name, orthopedic surgery. It is probable that I have drawn too boldly and perhaps used too brilliant colors in an enthusiasm which one feels for a subject which is the motive of his endeavor. I will ask you to believe, however, that I have honestly tried to let you see this motive. Shall we now try to outline the present purposes?

First, let us try to review a few evidences of progress of, let us say, the last decade. We know practically nothing more of the causes or the transmission of that apparently increasing scourge, infantile paralysis, but we do know much more concerning its treatment. From the seemingly reliable statistics of the Harvard Infantile Commission, of which Dr. Robert Lovett is chairman, at least 50% of the cases are abortive, and full or practically full recovery takes place without specialized treatment. There remain, unfortunately, many cases where permanent damage to the neuromuscular mechanism has been done. What can we do to rehabilitate these cases? We have learned that by patient, intelligent special muscle training very much can be done. If we should dissect the arm and hand of Paderewski and another arm and hand of the same size and lay them side by side, no one could tell one from the other. And yet what a vast difference between the accomplishments of those hands! Skilled labor in any trade is the result of long and patient training. The same physiologic laws obtain in the rehabilitation of cases of poliomyelitis. Muscle training is of utmost importance, and we are learning also that certain combinations of tendon transplantation are not giving the results hoped for and that certain other methods are restoring almost perfect function; for example, in complete loss of continuity of the musculospiral nerve, in which a part of the generous supply of the palmar flexors is utilized to restore dorsal flexion. We are learning from Hoke how skillfully to adapt the architecture of the foot to change conditions of muscle pull and make the weakened feet grow straight and not feel the loss of muscular support. Rational functional surgery is making the bracemaker poorer, but the life of the crippled child richer.

As the milk supply becomes cleaner, tuberculosis of the bones and joints is becoming more rare. We are learning not to call every low-grade monarticular infection tuberculosis, and instead of frightening the family and putting the limb in a permanent plaster or cumbering it with a brace, we are learning to observe it, and clear out the bowels and examine the tonsils and teeth, and then watch it in recumbency and often see it return quickly to normal function. We are appreciating defense mechanisms, and visiting Rollier on the Alps at Leysin, not to see poorly nourished, depleted children with pinched faces, but to look into the bright eyes of abounding health and stroke the plump, brown, velvety bodies of little Indians playing in the sunny snow with nothing on but canvas hats and breech cloths. Heliotherapy carefully carried out by known rules is an enormous advance in the treatment of surgical tuberculosis.

There is another class of children with whose serious ills much progress is being made. You are all familiar with the poorly nourished child who cannot be made to gain weight by the most careful feeding, who may have attacks of indigestion, perhaps cyclic vomiting, who even if he becomes constipated, may have convulsions not to be distinguished from epilepsy. Such children usually show round shoulders, weak back muscles, protruding abdomens and pronated feet. They are the ptotic children whom Bean and Treves and Bryant have recognized as the type hypo-ontomorph. Their bodily mechanics are at fault, and with postural training and rest periods in corrective positions, with now and then a temporary supporting brace, their weight increases, their digestive upsets disappear, their bowels move normally and the threatened curse of epilepsy is removed.

Much work needs yet to be done on the causes of low back pain and sciatica, but at least we are no longer satisfied with a diagnosis of sciatica, and certain gynecologists are maintaining that the misplaced uterus is very rarely responsible for back pain. Faulty posture, with increased lumber lordosis is accounting for lumbosacral strain and the occasionally relaxed and painful sacro-iliac joints. Anatomic variations which are most common in this region can be discovered in the roentgenogram. The unilateral massive transverse process of the last lumbar, with its bursa or true joint with the sacrum, the sacralized last lumbar or the lumberized first sacral vertebra, all these variations are being recognized as potentially important conditions making strains more easily suffered and accounting for the persistence of symptoms.

Perhaps the diseases which are most important in relation to their widespread incidence, their crippling nature and their uncertainty of cure are the different types of arthritis deformans. They have come within the purview of orthopedic surgery, because when the fires of infection or faulty metabolism have burnt out, we are called in to correct or better the acquired joint deformities. Stimulated by the pitiful sight of these cripples, we have sought to understand the etiology more clearly, and prevent what we cannot cure. At least we have come to recognize two types which are probably separate diseases and surely need very different treatment. We know that whatever benefit may be derived from the salicylates in acute rheumatic fever, nothing but harm can come from their prolonged use in these conditions. They may be useful to relieve pain temporarily, but continued they disturb digestion and unfavorably affect the already upset metabolism.

Undoubtedly in many of the cases of Ely's type I, foci of infection play an important part, but just what part is not as clear as the recent literature would lead one to believe. Badly infected tonsils and diseased teeth give rise to no arthritis in many invividuals. There apparently must be a background, a diathesis, before their relation is causal. We have all seen bad tonsils and bad teeth removed and a chronic arthritis continue to involve new joints with no abatement of its course. Pemberton, in his army studies, showed the intimate relation of diet, and his past and present biochemical studies offer us many leads of hope. Meanwhile, some of the "incurables" are recovering and the morbid process is being arrested in many cases by increasing elimination through the bowels and skin and correcting the body mechanics by positions of rest and exercise.

Whether or not the orthopedic surgeon shall seriously invade the field of fresh fractures must depend upon the general surgeon. If the general surgeon wants them and will acquire the knowledge and skill in handling them from the break to the return of wage-earning capacity, they should be his, but the same man ought to see them through. There should be no division of authority or sharing of responsibility. The problem is a serious one. Industrial insurance companies are crying "Come over into Macedonia and help us." The average orthopedic surgeon ought to be well qualified to aid in the restoration of function in these cases. Whether he fits himself to meet the emergency, be it operative or nonoperative, or whether the general surgeon learns to apply the proved methods of speedy rehabilitation, makes no difference, but we repeat, the same surgeon must do both. The traveler has never found it advantageous to swap horses in midstream.

The present purpose of orthopedic surgery is, therefore, not to take away but to add. It should become less and less separate from and more and more a part of general medicine and general surgery. It must lose its own soul in order really to find it. Its ultimate goal should be to disappear as a specialty. But it ought not to disappear until its principles are accepted and it has solved some of the problems which have been presented to it. It is but a part of the parent trunk rather than a special branch. It has no sharp anatomic limits like most of the other specialties, eye, ear, nose and throat, or even gynecology. It is to try to educate straight and its basic purpose is the same as that of every other branch of medicine; namely, the restoration of function.

While there will always remain those to whom the crippled child will appeal with such force that they will elect to become specially skillful in the correction of such congenital conditions as club feet and in the treatment of the chronic bone and joint diseases of children, such as tuberculosis and ostomyelitis, yet the adult cripple, when he is recognized, is capable of making no less strong an appeal. This adult cripple is by no means always crippled by actual deformity. The mass of human derelicts which are referred to an adult orthopedic clinic is appalling. The debilitated ptotic, the chronic arthritic, the lame backs in women and men, the weak feet, the stiffened muscles and joints following fractures, these are but a few of the problems which each day's clinic presents. They are not hopeless problems, and no more grateful patients can be found than those in whom it has been impossible to accomplish anatomic cures, but in whom it has been possible to restore function and independence. The case of lateral sclerosis who can expect no neurilogical help, but who has been taught to walk reasonably well and can abandon his wheel chair will be more appreciative than the man who has had proper weight-bearing lines accurately secured by the correction of his maligned tibia, which was sure to cause future ankle joint and foot strain.

The existence and persistence of these problems, ladies and gentlemen, is the only excuse I have to offer for our persistence.

Anna M. Schrader, M.D., Reporter.

LUZERNE—JUNE

Members of the Luzerne County Medical Society gave a testimonial dinner on June 1st, at 7 p. m., at the Westmoreland Club, in honor of Dr. Charles H. Miner, State Commissioner of Health. Various speakers expressed the gratification of the community over the local man's appointment to the most important health post in the state, and pledged their constant support and coöperation.

Dr. Edgar M. Green, member of the Advisory Health Board of Pennsylvania, spoke on "Community Health." Dr. F. R. Wheelock, City Health Physician of Scranton, talked on "The Relation Between the City and the State Health Departments." Dr. Lewis H. Taylor, who described the beginnings of the State Board of Health, and Colonel P. M. Ashburn, Commander of the U. S. Army Field Medical School at Carlisle, Pa., also addressed the Society.

Among those who spoke briefly, paying tribute to Dr. Miner, were Dr. L. R. Thompson, of Washington, D. C., of the Department of Industrial Hygiene and Sanitation of the U. S. Public Health Service; Dr. J. Anson Singer, of Stroudsburg, Pa.; General Asher Miner, Dr. S. P. Mengel and Dr. E. L. Meyers, of Wilkes-Barre, Pa. Dr. N. L. Schappert presided as toastmaster.

Dr. Miner replied to these tributes by urging all the physicians to consider themselves members of the State Department in their efforts to safeguard health. "The work calls for the intelligence and hearty coöperation of the medical profession and of the general public." Oppenheim's orchestra furnished music during the dinner.

The regular meeting of the Society was held in the Medical Building, June 6, 1923, and was called to order at 8:45 p. m.

Election of delegates for the State Society meeting in October resulted as follows: Drs. S. P. Mengel, Charles Long and Walter Davis. Alternates were Drs. Lewis H. Taylor, P. P. Mayock, D. G. Robinhold, A. W. Grover, G. R. Drake, and P. F. McHugh. Dr. S. M. Wolfe was nominated to be recommended to the House of Delegates as District Censor.

Dr. W. S. Stewart and Dr. Lewis H. Taylor gave a most interesting description of their trip to South America, with the American Surgeons' Convention, describing the cities visited, the various hospitals and the characteristics of the different countries.

The outing meeting was held on June 20th, at Ambrose West's "It'll Do Farm," near Dallas, Pa.

Lunch was served at 1 p. m., and an elaborate dinner and clam bake was held at 5 p. m.

A very exciting baseball game between the Mercy Hospital Staff and the City Hospital Staff was played. Numerous other sports, including tug of war, fat man's race, quoits, etc., were indulged in.

H. Irvin Evans, M.D., Reporter.

MIFFLIN—JUNE

An especially interesting and profitable meeting of the Mifflin County Medical Society was held at the Coleman House, Lewistown, June 7th, the occasion being a paper read by L. J. Durbin, district attorney, and a reception to Dr. J. A. C. Clarkson, who recently returned from a trip to the Orient and the Near East, these two events making the regular June meeting of the local society a memorable one.

Delegates were elected to the annual meeting of the State Medical Society to be held in Pittsburgh in October. Those elected were Drs. J. P. Getter, H. W. Sweigart and F. A. Rupp, primerius, first and second alternates, respectively.

The local medical men very much appreciated the presence of the district attorney of Mifflin County, and Mr. Durbin's paper on the subject, "Medical Testimony," was exceptionally well prepared, covering a subject of unusual interest to the doctors. In the course of his address, Mr. Durbin stated that medical testimony was one of the most important kinds of testimony, especially if given with caution. The general family medical practitioner is considered by the court as competent to give expert testimony, even though the physician is not a specialist. A jury may and often does put as much value on the testimony of such a medical witness as on the testimony of a specialist.

Medical testimony, continued Mr. Durbin, is of three classes, based on facts as observed by the physician, based on conclusions drawn from observations by the medical witness and based on the opinion of the medical witness, this opinion drawn from hypothetical questions. As between medical testimony based on facts observed and testimony drawn from hypothetical questions, the testimony of the former is generally considered by the jury of more value. Expert medical testimony is very often considered as of little value because people generally believe such testimony is colored and biased by the expert in favor of the one who pays, and very often pays large monetary considerations for such testimony. However, Mr. Durbin expressed the belief that such biased testimony was not so common as generally believed.

Medical testimony is especially important in criminal cases, such as cases of homicide where such testimony is practically indispensable, "corpus delicti" (body of the crime) being practically always proved by medical testimony. In giving such testimony, Mr. Durbin strongly emphasized the fact that medical testimony must always be definite and positive, and couched in language that the jury can understand. A doctor might testify that the patient died from "encephalitis lethargica," and not from a blow on the head. But such testimony will have more weight with the jury if the same doctor will state that the patient died from "sleeping sickness," the two terms meaning the same thing.

Mr. Durbin's talk was thoroughly enjoyed by the medical men, and elicited discussion and questions. A rising vote of thanks was given the district attorney for his valuable paper, after which the society adjourned to the dining room of the Coleman House for a fried chicken dinner. After the dinner, Dr. Clarkson was given a rousing reception, and responded most acceptably and entertainingly by a description of his journey across the Atlantic in the S. S. Empress of Scotland. Dr. Clarkson described the big boat as the tenth largest in the world. The return journey was somewhat marred by the presence of fog and ice, so that the big boat reached its destination four days late. Dr. Clarkson described very vividly his visit to King Tut's tomb, and other places of interest, and upon the conclusion of his talk distributed to all those present around the festive board coins as souvenirs from the different countries visited.

H. Irvin Evans, M.D., Reporter.

PHILADELPHIA

May 9th

Dr. T. McKean Downs: "An Interne's Thoughts on Medical Education."—Dr. Downs emphasized the importance of having in medical schools teachers who not only are well versed in their subjects, but who are able to impart their knowledge to the students. In addition, their moral character must be one of their strongest assets. A course of lectures might well be added to link up the work of the first and second years with the clinical teaching, as is done for anatomy. Much more emphasis should be laid on internal medicine, while surgical clinics and most of the specialties should be greatly cut down. The average general practitioner needs to know medicine, pediatrics and obstetrics, and promptly forgets the other subjects taught in the undergraduate curriculum. He needs to know when an operation is necessary and when it is contraindicated, and not perfect operative technique. A specialist must take up postgraduate work in his subject before he is qualified to practice it anyway, and he would make a greater success if he were to spend his undergraduate days in receiving a better foundation in the fundamental principles of medicine, with more bedside work.

Dr. W. W. Palmer, Professor in Medicine, Columbia University: "Educational Problems in the Clinical Department."—The overcrowded schedules and long required hours prevent the student from becoming well grounded in any one subject. This leads to confusion, giving him knowledge of a few uncorrelated facts with no habits of correct thinking. The largest portion of time should be given to medicine, and in surgery to diagnosis rather than to the watching of operations, while the student should be stimulated to think for himself. It would be well to reduce the number of required hours to the minimum of thirty-six hundred, making the curriculum more elastic, and giving a better correlation of subjects. Greater use could be made of University methods of teaching, and an attempt made to attract the best minds into the profession, affording well-trained, stimulating leaders and teachers .

Dr. John H. Gibbon: "The Teaching of Undergraduates in Medicine."—Great changes have taken place in medical education in the last thirty years, and the present method seems to be the best. However, the object of turning out medical men should be borne in mind. It is a mistake to try to make all students research workers. All should have a good fundamental training, then clinical work. Some students do not even do an entire dissection. Many internes have no knowledge of fractures and their reduction, and must depend on the x-ray. A professor may be a research worker, but he must be a teacher, and teach the fundamentals and established knowledge. Many careers are spoiled by the lack of anatomy, chemistry, physiology and pathology. The hardest thing to teach is reasoning, but that is the prime essential. The bedside manner of teaching will not cover all cases, and cannot take the place of orderly systematic instruction.

Discussion by Dr. Alfred Stengel: Fundamental knowledge must be imparted of medicine and also of the science of medicine. Schools are hampered by State Board requirements. It is not fair to rural practitioners to leave all the specialties for postgraduate study. The question is what to teach, rather than who or how. Graduates prepared to practice must be turned out. Research ideas must be inculcated in some.

Dr. Thomas McCrae: Students should very early be shown the connection of physiological chemistry, for instance, with clinical work. Full-time teaching is a pure experiment. What is meant by University methods? Teaching is teaching. Students must be taught to think, and should have been done so before they reach medical school. Many of the specialties could be cut out. The general practitioner needs to know three or four things about the eye, which he could learn in one hour.

Dr. Hobart A. Hare: Students see patients in hospitals as cases without the human consideration, when diseases are in full fruition, instead of in incipiency. Full-time professors suffer from inertia due to lack of competition. Men are turned out who do not know the ordinary things everyone knows. They don't know, don't think, and possess only a mass of jumbled facts, not knowledge. We went to the legislature to have laws made, and now can't get them off the statute books. The average student is incapable of performing the laboratory technique of the specialist, and it is a waste of time to try to teach him. The first seed of medical investigation is planted in his soul when he thinks out something for himself.

Dr. W. Estell Lee: The public needs and demands that the physician have a knowledge of hygiene, therapy and nutrition. Familiarity with operative technique is not only a waste of time but dangerous, since the interne attempts tasks beyond him, when they look so simple. Laws can be changed if the profession wants them changed. Medical education has gone beyond the legislation that controls it, and the whole thing should be reorganized and restandardized.

Dr. Charles H. Frazier: There should be a correlation of theoretical and practical work in surgery, pathology and bacteriology. Major surgery should be regarded as a specialty. The student must know gallbladder disease, gastric ulcer, and how to reduce simple fractures. Instruction should not be dogmatic.

Dr. William Pepper: Unable to be present.

Dr. Richards: Reasoning, based on medical observation, is the greatest thing to teach.

Dr. Roberts: Students should learn to think in college, and go to medical college to learn to practice. Professors should be people who know how to teach. The danger in optional hours is that the student will pick out a little of this and that.

May 23d

Dr. David Riesman, president, in the chair.

Dr. D. J. McCarthy: "Migraine."—Migraine is not a disease but a symptom, and has a definite reason for its existence, an underlying pathology. Pain has a protective and conservative value, and is used to indicate this pathology. The usual treatment is to give one set of drugs for the pain and another set for the nausea, which merely mask the symptoms and do more harm than good. Dr. McCarthy discussed several cases selected from the large number he has treated during the last twenty years.

The first case was that of a woman of sixty-five, who, with a cardiorenal condition, arteriosclerosis and myocarditis, was in the habit of running up and down two flights of stairs about fifty times a day. Her headaches came on after social activities, and always began with gastro-intestinal disturbances. Treatment consisted in eliminating the matter of running upstairs. The second case was also diagnosed as a cardiorenal case. After six weeks in the hospital with treatment to increase the heart muscle tone, the headaches were under control.

The third was a mental or intellectual type of case. The patient was working under extremely high nerve tension, with intellectual ambitions that exceeded his abilities. He was advised to give up his ambition to become County Superintendent of Schools, and take up farming. The next case of migraine was due to a general endocrine disturbance, and was relieved by the administration of total ovarian extract, thyroid, and pituitrin. The fifth case also showed the relation between migraine and the pituitary and thyroid, and the relation between the condition of the heart muscle tonus and the control of the pituitary and thyroid. In another patient there was evidently a psychogenic factor to be considered. Another probably had some nose and throat and sinus infection acting as foci. The last case discussed showed extensive arteriosclerosis of the brain at autopsy. Could the headaches have been caused by anemia, due to kinking of the blood vessels?

The various causes which underly the condition, then, may be disturbance of thyroid function, sex function, infection of sinuses, teeth, tonsils and mastoid, decreased physical tone, nerve exhaustion, organic visceral disease, high tension, bad hygiene of sleep, rest and exercise, and faulty metabolic function. Ninety per cent of the treatment is the diagnosis, and the causal factors should be removed if possible, or the life so adjusted as to compensate for irremovable conditions.

Discussion by Dr. McConnel: An interesting case was cited of a patient who suffered from intense headaches in the early morning, found to be due to his habit of sleeping with a cold draught of air striking his bald head. Migraine is interesting from its peculiar mode of appearance. In a very nervous individual, working under pressure, the headaches are a response to the intense nervous exhaustion of his manner of work.

Dr. Sherman F. Gilpin: "Sciatica."—Until the last decade sciatica was looked upon as a disease entity, but it is now considered as a neuralgia, with an interstitial neuritis as the underlying pathology. It is usually caused by poisons circulating in the blood, especially after the skin has been exposed to cold. Irritating pressure, muscular exertion, arthritis and syphilitic meningitis are often etiological factors. The most common symptom is pain and tenderness along the nerve trunk. Careful differential diagnosis must be made to determine whether the condition is primary or secondary, and the diagnosis of primary sciatica should be made only after everything else is excluded.

Treatment consists in rest in bed, the leg flexed at the knee, well padded and dressed with a splint or a plaster. Heat is applied along the course of the nerve. Iodids and salicylates are given in acute cases. The diet is nutritious and nontoxic. After the splint is removed, massage and electricity are employed. In chronic cases, stretching and injection of novocain and normal salt may be done, but prolonged rest will be more efficacious.

To sum up, after all primary causes have been eliminated, a few cases will be found to be due to exposure and the toxins of fatigue and exhaustion.

Discussion by Dr. McConnell: Sciatica is a symptom and not an idiopathic disease of the sciatic nerve. Other nerves are as vulnerable and exposed but are not so liable to infection. Intra- or extrapelvic conditions, sarcoma, sacroiliac disease, ischiorectal abscess, are all causes for trouble.

Discussion by Dr. W. J. Taylor: In a limited number of cases, the disease is a perineuritis, and is relieved by operation. There are three classes of cases, one free fom pain at rest, the second with intense pain on exercise, and the third with pain at rest but improvement on exercise. In the first, the inflammation will subside, but adhesions remain. The second may be relieved by operation, but the third will not.

Dr. Edward Martin: "The County Medical Society and the Public."—The county medical society is a power in society and may accomplish a great deal of good. It should be the dominant factor in any health program. An instance of what can be done by the society as an organized body is found in diphtheria. The press, pulpit and school, and labor organizations are being used to disseminate knowledge on this subject. The program takes in all civic organizations, and can reach every person in the state.

Dr. Maier: The president has taken up the matter of giving health talks on the radio every week.

Dr. F. Hurst Maier again read the report of the committee on "The Nursing Situation in Philadelphia."

A motion was made and carried that the committee be continued to formulate and carry out the recommendations made. A. R. Winter, Reporter.

WESTMORELAND—JUNE

Held on the first Tuesday of the month the June meeting ran true to form as one of extreme interest. It is pleasing to report a continuation of healthy revival in the way of discussion, interest and attendance.

It was with a large measure of reluctance that the society decided to follow its usual summer routine and discontinue meetings until September. This proceeding was put across because of and partly compensated for by the passage of a motion inaugurated by Doctor Will of the Taylor family, to the effect that "we have one wild day of a picnic some time between the present and the date set for the first fall meeting." This coming event may or may not be officially reported to the Journal.

Doctor Charles E. Snyder gave the society a ten minutes' dizzy dissertation on "The Place of Psychoanalysis in Medicine." His text was Brill's work, and he excited keen and general interest in his review of the book. Somehow C. E. S. took a lot of the foreboding fear away that has always surrounded this subject and he broadcasted a feeling among the hearers that an unarmed man with a bit of medical training might take a round or two any time with a subject that has been hitherto rather sidestepped. The writer is aware of two orders lately having been mailed the publishers for most recent editions of the work.

Of the Obers in our county registry there are two—Bert and Irwin. Heretofore the former—of Latrobe—has always represented the clan when it came to talking in meeting. Now the latter—of Greensburg—has cast his chapeau in the circle and has emerged as an embryonic adornment of the rostrum. And mark you, it was not an easy one that he picked either. If a sixth hour paper on "The General Uses of the Alkalies in Medicine" isn't about as hard as unquarried limestone, then deponent knoweth not. If it were not for the ever-tending formation of acid pathology in the human body, then it would seem that our preparations of the alkalies might be greatly lessened in number because of the lesser work required of them. His paper was an excellent appraisement of a class of hard-working, every-day line of medicines.

When Dr. J. Q. Lemmon is assigned a paper he well knows that we expect much of him and he always delivers no less than that amount to us. We are not yelling our heads off because of the great way in which he stuck to his subject, but we are wholly satisfied and devoutly grateful for the broad, happily worded paper he presented on "Diet in Skin Diseases."

The fourth ten-minute talk of the evening was given by Dr. B. M. Watkins on the subject, "Diet of the Infant up to One Year of Age." He gave a very interesting and instructive talk along the lines of simplified infant feeding as advocated by Dr. Dennett. Dr. Watkins is at home when it comes to a subject of this kind, for he takes particular interest in the troubles of the infant.

The papers were all freely discussed and all felt that it was an evening very profitably spent.

D. Allison Walker, M.D., Reporter.
and T. St. Clair, M.D.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. William K. Van Kirk, of McKeesport, aged 74 years, died on May 9th. He was graduated from Jefferson College of Philadelphia in 1873.

Dr. John Ricciardi, of Philadelphia, died on April 27th. He was born in 1863 and was graduated from the University of Naples, Italy, in 1888.

Dr. Effenger R. Kline, of Philadelphia, aged 69 years, died May 8th. He was a graduate of Jefferson Medical College of Philadelphia, class of 1882.

Dr. Jacob D. Moyer, of Wyomissing, aged 61 years, died on May 8th of cerebral hemorrhage. Dr. Moyer was a graduate of Jefferson Medical College of Philadelphia, class of 1886.

Dr. Henry F. Womer, of Johnstown, who was graduated from Jefferson Medical College, Philadelphia, in 1878, died April 29th following a long illness. He was 78 years old.

Dr. Edward Yarnall Rich, of Mechanicsburg, aged 45 years, died on May 6th. Dr. Rich was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1901.

Dr. Charles Sohn, who was graduated from Bellevue Hospital Medical College in New York in 1890, died May 22d, at his home in Pittsburgh, of pneumonia, aged 62 years.

Dr. Henry N. Dunnell, of Scranton, who was graduated from the Medical Department of the University of the City of New York in 1870, died suddenly in his office on April 25th, aged 83 years.

Dr. James M. Strohm, of Fredericksburg, aged 65 years, died on April 18th, of embolism. He was a graduate of the Medical Department of the University of the City of New York, class of 1881.

Dr. Fremont W. Frankhauser, of Reading, died suddenly in Philadelphia on May 23d. He was born in 1856 and was graduated from Jefferson Medical College of Philadelphia in 1880, and from the Medico-Chirurgical College of Philadelphia in 1888.

Dr. Alice Margaret Fasold, of Pittsburgh, aged 27 years, was killed May 31st when the automobile in which she was driving went down an embankment. Dr. Fasold was graduated from the Woman's Medical College of Pennsylvania, Philadelphia, in 1920.

Dr. Jacob R. Lehman, who practiced for many years in Mountville, died May 9th at his home, of heart trouble, after an illness of several months. Dr. Lehman was in his 69th year. He was a graduate of Jefferson Medical College of Philadelphia, class of 1882, and was at one time president of the Lancaster County Medical Society.

Dr. Ambrose J. Herr, of Lancaster, died suddenly, May 27th, of heart trouble. Dr. Herr was born in 1838 and was graduated from Jefferson Medical College of Philadelphia in 1861. He was a Civil War veteran and after the war took up the practice of medicine. He later became interested in banking and retired from active medical practice about 12 years ago.

Dr. Augustus Korndoerfer, one of the oldest physicians in Philadelphia and one of the founders of the Children's Homeopathic Hospital, died on June 12th, aged 80 years. He had been ill for several years. A widow, three daughters and two sons survive him. He was the first man to matriculate at the Hahnemann Medical College and was graduated from that institution in 1868.

While funeral services were being conducted for his brother in another part of the city, Dr. Jacob W. Shope, Civil War veteran, of Harrisburg, died at his home on the afternoon of June 14th. His death was the result of an attack of apoplexy sustained on May 26th. Dr. Shope was born in 1845. At the age of sixteen he enlisted in the Union Army and served throughout the Civil War. He was graduated from Jefferson Medical College of Pennsylvania in 1880, and following his graduation he located in Halifax, where he practiced for nearly half a century. When he moved to Harrisburg he became affiliated with the Polyclinic Hospital upon its organization, and was dean and chief of staff at the hospital when he died.

Dr. Charles Lincoln Furbush, Director of the Department of Health of Philadelphia, died at his home in that city on June 26th, following an illness of two weeks. He had been suffering from hardening of the arteries and high blood-pressure. Dr. Furbush was a recognized authority on sanitation and had been associated with General Gorgas, surgeon general of the United States Army, in the eradication of yellow fever and other tropical diseases in the Canal Zone.

Doctor Furbush was born in New York in 1863. He was graduated from the Medico-Chirurgical College of Philadelphia in 1893 and did postgraduate work in the Universities of Berlin and Heidelburg in 1894 and 1895. He was a military surgeon of wide experience, and had charge of sanitary and medical work in the Philippines, Cuba and elsewhere before taking up his work in Philadelphia. During the World War he volunteered his services with the American Red Cross and steadily rose in rank from a major to a colonel. In December, 1918, he was made a member of the Yellow Fever Commission of the Rockefeller Foundation to Central America. He visited Guatemala and Salvador, making extensive surveys and research. He was an authority on the prevention of tuberculosis, and introduced many measures for the prevention of the disease in Philadelphia.

ENGAGEMENTS AND MARRIAGES

Dr. Harry W. Baily, of Tamaqua, and Miss Mary Haldeman, of Reading, were united in marriage on June 21st, at Mt. Penn, Reading.

Mr. and Mrs. James T. Young, of Philadelphia, announce the engagement of their daughter, Miss Catherine Young, to Dr. Harry F. Gockley, of South Fork.

Announcemont is made of the marriage of Dr. William Morton Kennedy, of Philadelphia, and Miss Dorothy Hilda Gerecke, of Scranton, on June 2d, at Philadelphia.

Mr. and Mrs. William M. Fahnestock, of Harrisburg, have announced the engagement of their daughter, Miss Katherine Vandevort Fahnestock, to Dr. Richard J. Miller, of Harrisburg. Miss Fahnestock, who is a graduate of Swarthmore College, has studied dramatic art in New York and Paris. Dr. Miller is a graduate of the University of Pennsylvania Medical School, and during the war he served overseas with the British forces in a medical unit.

Miss Miriam Galbraith Cocklin, daughter of Dr. and Mrs. Charles C. Cocklin, of Harrisburg, and Dr. Charles B. Fager, also of that city, were united in marriage at the Cocklin summer home at Heckton, on June 14th. The bride is a graduate of Hood College and has been employed as technician in the laboratory of the Harrisburg Hospital. Doctor Fager is a son of Dr. and Mrs. V. Hummel Fager, of Harrisburg, and is associated with his father in the practice of his profession.

ITEMS

Dr. Mary J. Baker, of New Castle, has been elected by the school board as school physician for the ensuing year.

Dr. J. C. Biddle, of Ashland, has tendered his resignation to the Governor as superintendent of the Ashland State Hospital.

Drs. Horace C. Kinzer and Clarence R. Farmer, of Lancaster, spent ten days recently at the Mayo Clinic, Rochester, Minn.

Drs. G. A. Poust, of Hughesville, and J. F. Gordner, of Montgomery, have returned from Chicago, where they were doing postgraduate work.

Dr. F. D. Kilgore, of Harrisburg, recently attended the twenty-fifth reunion of his class at the University of Pennsylvania, Philadelphia.

Dr. and Mrs. Frederick Fraley, of Norwynden, Merion, have left for Northeast Harbor, Me., where they will occupy their cottage for the season.

Dr. J. B. Lowman, of Johnstown, Treasurer of the State Society, has returned from a trip around the world. He left Johnstown last January.

Dr. J. Norman White, of Scranton, is on an extended trip through the South and Middle West and attended the meeting of the Kiwanis Club at Atlanta, Ga.

Dr. and Mrs. Isaac Starr, Jr., of Cresheim Valley Drive, Chestnut Hill, are receiving congratulations upon the birth of twins, a son and daughter, born on May 30th.

Drs. T. Kenneth Wood, of Muncy; W. E. Turner, of Montgomery, and Irvin T. Gilmore, of Picture Rocks, are in Boston doing postgraduate work at Harvard University.

Dr. and Mrs. J. Gibson Logue, of Williamsport, spent some time during May in New York City, where Dr. Logue attended childrens' clinics at the New York Postgraduate Hospital.

Dr. and Mrs. C. A. R. McClain, of Mount Union, recently witnessed the graduation of their son, Fred Hunter McClain, at the School of Dentistry of the University of Pittsburgh.

Dr. H. B. Davis and family, of Lancaster, will spend the summer on their houseboat, which they have at Riverton, N. J. Dr. Davis will attend the Postgraduate School at the University of Pennsylvania during the summer.

Dr. Luther C. Peter, Philadelphia, was a guest of the Eye, Ear, Nose and Throat Section of the Canadian Medical Association at its recent meeting in Montreal, and presented a paper on "The Practical Value of Modern Perimetry in Diagnosis of Disease of the Visual Pathway."

Dr. J. A. C. Clarkson, Secretary of the Mifflin County Medical Society, who has been abroad for four months, and Mrs. Clarkson, who has been to Niagara Falls and Quebec, were recently guests of the Rev. Dr. and Mrs. D. N. Miller, of Harrisburg. They have returned to their home in Lewistown.

Dr. William L. Clark announces the opening of a private hospital for the study and treatment of neoplastic diseases at 2215 Walnut St., Philadelphia. The staff will consist of Drs. William L. Clark, Harvey M. Righter, J. Douglas Morgan, Eugene J. Asnis and Arthur W. Goodspeed (Ph.D.), in coöperation with qualified consultants.

Donald Oenslager, of Harvard University, son of Dr. and Mrs. John Oenslager, of Harrisburg, was recently graduated with "cum laude" honors. Mr. Oenslager has been awarded the Sachs Fellowship of $2,000 and is the youngest man who has received this honor. He will sail in September for a year's study in Europe of theater and stage settings.

Dr. Omer R. Etter, who has been located at Warrensville for the last three years, left for Boston recently to do some postgraduate work at Harvard University, after which he will spend some time at a postgraduate school in New York City. After completing his work in New York, Dr. Etter will return to his native state, California, and there resume the practice of medicine.

The Dean of the Jefferson Medical College announces the election of Dr. Bowman C. Crowell, of Charleston, S. C., as Professor of Pathology to succeed to the position formerly occupied by Dr. William M. L. Coplin, who resigned a year ago. Professor Crowell is a native of Nova Scotia, a graduate of the Academic and Medical Departments of McGill University, and has had a wide experience as teacher, pathologist and investigator.

Miss Isabelle Fussell, daughter of the late Dr. M. Howard Fussell and Mrs. Fussell, of Germantown, was the outstanding figure in the fifty-first annual commencement at Swarthmore College. Upon her was bestowed the highest honor that a woman student can receive, the award of "The Oak Leaf." This is the second time the honor has been given. It is presented by the faculty to that woman member of the senior class who is outstanding for loyalty, scholarship and service.

Dr. Edward E. Montgomery, of Philadelphia, will retire from active practice this summer, after 50 years' service in the medical profession. He will start next September on a tour around the world, which will continue until 1926, the year of the Sesquicentennial Exhibition. It is his intention to speak in the interest of the Sesquicentennial in the various foreign lands he purposes to visit, as it is his opinion that the exposition would be of great value not only to the people of the United States, but also to the peoples of the entire world.

Four more appointments have been made on the teaching staff of the Woman's Medical College of Pennsylvania, Philadelphia, to fill vacancies created in the recent clash between the staff and corporators of the Institution. Dr. George M. Dorrance, who is on the teaching staff of the University Hospital, has accepted the chair of surgery; Dr. Joseph C. Doane, medical director of the Philadelphia General Hospital, is to be clinical professor of medicine; Dr. Elizabeth Dixon Wilson will be director of laboratory hospital work, and Dr. H. Evert Kendig has accepted the chair of pharmacology and materia medica.

At the call of Dr. Chas. Miner, State Secretary of Health, a meeting was held on June 21st at the State Capitol, Harrisburg, to organize for an educational campaign to encourage annual health examinations. The campaign has been initiated by the National Health Council, and is to be launched on July 4th, the nation's birthday. The slogan is: "Have a Health Examination on Your Birthday." All agencies operating in the cause of public betterment are asked to coöperate.

Dr. Miner presided, and after stating the subject for consideration, introduced the following speakers: Dr. Edward Martin, Chairman of the Committee on Public Relations of the State Medical Society; Dr. Elizabeth Bricker, of the Department of Labor and Industry; Dr. Turnbull, Deputy Secretary of Health; Dr. H. C. Frontz, President-Elect of the State Medical Society; Dr. C. Waldo Cherry, Pastor of Pine Street Presbyterian Church of Harrisburg; Mr. Rule, Deputy Superintendent of Public Instruction; Dr. Miller, of the Department of Health; the Chairman of the Committee on Public Relations of the Rotary Club of Harrisburg, who read the Rotary Club plan for Harrisburg; Miss Margaret Dunlap, President of the Graduate Nurses Association of Harrisburg, and a number of others, all of whom pledged coöperation of the organizations they represent.

The large audience present was formed into a State Committee to push the campaign, and Dr. Miner was empowered to appoint an Executive Committee of five to formulate detailed plans, reporting to the General Committee. Harrisburg and Allentown were chosen for a special effort for the next several years, after which the meeting adjourned.

If the present alarming proportion of automobile accidents continues, we will soon see a hospital in connection with every service station. Perhaps a national campaign would help, with a liberal use of the slogan, "A doctor in every service station."

If competition is the life of trade, we had better subsidize the Osteopaths, Chiropractors, Christian Scientists and patent medicine vendors.

They say Americans eat too much; but if we are going to save on both grocers' bills and doctors' bills, what are we going to do with all our money?

The best sedative we know is a day spent in the woods fishing, listening to the song of the brook and the hushing rustle of the trees; resting both soul and body, where the telephone ceases to bother, and the automobile ain't.

THE
MEDICAL SOCIETY OF DELAWARE

ADDRESS

THE NATURE OF THE COMPLEMENT FIXATION REACTION IN SYPHILIS IN RELATION TO THE STANDARDIZATION OF TECHNIC*†

JOHN A. KOLMER, M.D.
PHILADELPHIA, PA.

The literature upon the Wassermann and other serum reactions in syphilis has become so voluminous and the subject has been discussed so frequently and with such detail, that it would appear almost superfluous to devote more time to it. On the other hand, syphilis is so widespread and of such high economic importance, is so likely to be encountered in every specialty of medical practice, and may so easily escape clinical detection in certain stages, that the subject is one of universal interest and great importance, and improvements in our aids to diagnosis are to be welcomed. No other strictly laboratory test has been more used and abused, lauded and condemned and frequently misunderstood than the Wassermann test; yet its intrinsic worth has enabled it to weather all storms so that it probably stands to-day, potentially at least, the most important single laboratory procedure, full of possibilities for great good when properly conducted and interpreted, but of even greater possibilities for harm when technically incorrect and misunderstood.

THE PROPER FUNCTION OF THE COMPLEMENT FIXATION REACTION IN SYPHILIS.—Syphilis in its first and especially in its later manifestations may so readily engage attention in every specialty in medicine that all physicians must expect to encounter it in their practice. Specialists are usually highly skilled in detecting the disease when it involves their particular domain of work, but in its later stages with varied clinical manifestations the disease may easily escape detection by the general practitioner. In its latent stages it may escape diagnosis by even the most skilled physician, as likewise the atypical case with a negative or indefinite history. The complement fixation test in order properly to fulfill its function must prove of most aid under these conditions—not to replace clinical acumen and judgment, but to furnish an additional and accurate means of diagnosis of the clinically difficult, doubtful or unsuspected case. When and where clinical skill is least, reliability of the serum test should be greatest, and for this reason the technic is deserving of more attention as part of the nation-wide movement for the diagnosis and thorough treatment of syphilis.

Probably with the majority of physicians the Wassermann test is acceptable only as confirmatory evidence of syphilis. Many are unwilling to ascribe any significance to the reaction in either a positive or negative way unless the result meets with their clinical expectancy. Doubtless not a few have been forced into this attitude by actual experience. I believe, however, that it is possible to avoid technical errors and greatly improve the diagnostic status of the test and that it should be the aim and purpose of serologists to evolve a test capable of correctly detecting the disease when this is not possible by clinical means; to me the complement fixation test fails in its ultimate mission and purpose if it fails to do so. I believe that falsely positive reactions are most likely to be caused by technical errors and that, as in other branches of medicine, skill and experience are required to reduce their incidence to a minimum. I believe that with improved technic the incidence of falsely positive reactions will be negligible because there is no biological reason for their occurrence in any nonsyphilitic disease other than frambesia tropica. Falsely negative reactions however, will probably always occur for biological reasons, because no matter how sensitive a test may be made, it cannot detect in the serum or spinal fluid something that is practically absent, and it would appear that in some cases of latent syphilis the activity of spirochetes is so slight or their numbers and virulence so reduced, that demonstrable amounts of "reagin" are not produced.

I trust that this high ideal of the complement fixation test in syphilis is justifiable. According to my own observations and experiences I believe it is, although I admit that the full possibilities of the test are realized only by close coöperation between clinician and serologist or by him who possesses training and experience in both branches.

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*Read by invitation before the Medical Society of Delaware, Dover, October 10, 1922.

†From the Dermatological Research Institute of Philadelphia and the Department of Pathology and Bacteriology of the Graduate School of Medicine of the University of Pennsylvania.

Nature of the Complement Fixation Reaction in Syphilis.—The complement fixation reaction occupies a very unique position among immunological phenomena. At first regarded as a specific reaction, it is now known to be biologically nonspecific, but in most parts of the world this does not seriously reduce its diagnostic value in syphilis because the peculiar antibody-like substance to be found in the blood or spinal fluid or both, and responsible for the reaction, is known definitely to occur only in syphilis and frambesia tropica or yaws.

Infection with spirochetes of these two diseases results in the elaboration of a substance aptly called "reagin" by Neisser, which has the property of uniting or reacting with certain lipoidal substances, the resulting complex regarded as a precipitate by some investigators, being able to absorb or fix hemolytic complement in the test tube. This "reagin" is probably produced by the cells directly in contact with and stimulated by the spirochetes; it is first found, therefore, in the tissue juices of the chancre, as recently shown by Klauder and myself. As the spirochetes are disseminated through the body the tissues of various internal organs, including those of the brain and spinal cord, very probably participate in the production of this Wassermann substance or "reagin." Even the cells of the cardiovascular system may participate in the process, as likewise the lymphocytes and other cells of inflammatory stimulation surrounding the nests of spirochetes. It may be that the lipoids of spirochetes are antigenic and induce the production of the "reagin," but so far all attempts to produce antibodies with pure lipoids have failed, and even if it were true, one would expect a certain degree of specificity on the part of these lipoids, which has not been demonstrated. This view does not coincide with our present conception of the tissues usually concerned in antibody production in infectious diseases, but there are no valid reasons for regarding this cellular "reagin" as a true antibody. In the first place the amount to be found in the body fluids bears a more or less direct relation to the severity of infection, although this relation may not be clinically apparent if the spirochetes are active in tissues of minor physiological importance. In the second place it may be present during the latent or resting stages of the disease in such small amounts as to escape detection, whereas if it were a true antibody capable of forcing the spirochetes into these periods of latency, it should be demonstrable in large amounts. For these and other reasons the complement fixation reaction is to be regarded as an index of the degree of infection rather than of immunity, and if this is true, the phenomenon is unique, not only for this reason but likewise because of the pecular nature of the "reagin."

This "reagin" has the power of fixing complement in the presence of a suitable suspension of lipoids. It is probably not itself a lipoid or identified with the lipoid content of serum or spinal fluid, although this phase of the subject is by no means a close chapter and requires further investigation.

The Practical Specificity of the Complement Fixation Reaction in Syphilis.—The important practical question is, may similar cellular "reagins" be produced in diseases other than syphilis and frambesia, capable of bringing about the physio-chemical phenomenon of complement fixation in the presence of extracts of lipoids? Do the positive Wassermann reactions which have been recorded as occurring in leprosy, diabetes mellitus, during the febrile stages of malaria, typhoid fever, pneumonia, late pregnancy, and so on, answer the question affirmatively? When one remembers the many chances of technical error capable of involving every important element and phase of the test, the answer must be given with great caution. Furthermore, may not pregnancy, an intercurrent infection, a metabolic disease and so on stimulate latent foci of syphilitic spirochetes into activity, with the production of "reagin," just as trauma may possibly be provocative or stimulating?* I am sure that this question of nonspecific reactions cannot be answered by a mere review of the literature upon the Wassermann reaction in nonsyphilitic diseases because too much of it has been built upon obvious technical errors. Neither do I disclaim the possibility of observing positive complement fixation reactions with a correct and acceptable technic in nonsyphilitic diseases, but I do know that the clinician is not always infallible in his judgment, that syphilis can escape clinical detection and that these unexpected positive reactions are not always due to laboratory error. My question remains, is a "reagin" similar to that produced in syphilis and frambesia, or a physico-chemical alteration of the blood and spinal fluid similar to that occurring in these diseases, to be found in other infectious and noninfectious diseases? A final answer cannot be given, as the subject requires further investigation, but if I may be permitted to express a prediction, I believe that the answer will be negative and that as clinical and pathological knowledge of syphilis is developed, and more especially as our complement fixation technic is perfected, more and more emphasis will be placed upon what may be called the "syphilitic significance" of these unexpected and weakly positive reactions with the sera of individuals regarded tentatively as nonsyphilitic.

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*A recent paper by Klauder on Syphilis and Trauma (Jour. Amer. Med. Assoc., 1922, 78, 1029) is very instructive in this connection and answers this question affirmatively.

A source of clinical error worthy of keeping in mind is that a positive Wassermann reaction does not necessarily mean that a particular lesion is syphilitic. For example, a tuberculous ulcer may occur in the larynx of an individual with latent syphilis and fail to improve with antiluetic treatment. On the other hand the complement fixation reaction may yield falsely negative reactions, and not a few physicians regard the test as insufficiently sensitive.

Biologically Falsely Negative Reactions and the Necessity for a Sensitive Test.—These false reactions may be due to the presence of insufficient amounts of "reagin" in the blood or spinal fluid or to technical errors. The mere fact that a person is known to have contracted syphilis does not necessarily mean that the "reagin" is present in detectable amounts. There must be a certain degree of spirochetic activity and doubtless numbers of spirochetes, and their virulence and location in the body are important modifying factors. Warthin has shown that spirochetes may exist in the tissues with practically no inflammatory reaction and under these conditions "reagin" production must be very slight.

Therefore the technic of the complement fixation reaction in syphilis should be as sensitive *as is possible with specificity*. Every serologist knows that the test may be rendered so delicate as to incur the risk of nonspecific reactions, but the harmfulness of these is so apparent that they are not included in the present discussion. Whether or not cases of latent syphilis unexpectedly detected by the complement fixation reaction, are subjects for mild, moderate or intensive treatment is likewise aside from the present discussion. There ought to be, however, no difference of opinion on the desirability of having a complement fixation test as sensitive as is possible with practical specificity, in order to avoid falsely negative reactions and especially when the test is employed as a guide to treatment to avoid the regrettable error of undertreating the disease. Even under these conditions we will continue to secure falsely negative reactions for the very good biological reason that where "reagin" is practically absent from the serum and spinal fluid it cannot be detected in the test tube. In connection with this subject of biologically falsely negative Wassermann reactions it is worthy of remembering that while "reagin" may not be present in detectable amounts in the blood, sufficient may be present in the spinal fluid to yield positive reactions. The reason is unknown. It may be that in these cases the spirochetes are mainly located in the tissues of the brain and spinal cord and that the "reagin" produced by these tissues finds its way into the spinal fluid, where it may be detected in smaller amounts than is possible in the serum because five to ten times more spinal fluid may be employed in the Wassermann test than is permissible with serum. I believe this to be the principal reason, but in addition it may be that some of the "reagin" is filtered out of the spinal fluid during its reabsorption into the lymphatic and vascular systems.

Studies in the Standardization of Technic.—During the past six years my colleagues and I[1] have been actively interested and engaged in a series of investigations aiming to study every phase of complement fixation in syphilis for the purpose of building up a test possessing a maximum degree of sensitiveness with the minimum possibility for yielding nonspecific reactions. I realized that the task was big before a start was made, but did not conceive that it would require the very large amount of work that has been done. As our investigations proceeded it became evident that every detail, regardless of how trivial it may at first appear, was worthy of careful study. My associates and I have striven always to conduct the work without preconceived ideas and without bias. It can scarcely be hoped or expected that we have escaped technical errors and erroneous conclusions, but we have faithfully described what we have done and what we have observed. These investigations have finally enabled us to build up a new complement fixation test for syphilis which I hope others will find as satisfactory as ourselves and that clinicians and serologists will at least consent to give it a fair trial alongside of their own technic.

Standardization of the complement fixation reaction has been discussed and if accomplished may yield certain advantages. For example, it would enable a closer analysis and evaluation of different kinds and methods of treatment, and greatly increase the confidence of the medical profession as a whole in the test as an aid in the diagnosis of syphilis.

Doubtless many physicians have had the unhappy experience of securing varying reports on the Wassermann reaction with portions of the same blood sent to different laboratories. This is regrettable but not altogether unexpected, when one remembers the great influence of technic upon the reactions and the numerous modifications being practiced. Standardization of technic would aim to correct this situation, but it is easy to fall into the error of making the "remedy worse than the disease." For example, if it were desired simply to unify the results in so far as positive or negative reactions were concerned, a simple modification of the original Wassermann reaction could be made to fulfill the requirement. In other words, by adopting a technic capable of detecting only relatively large amounts of "reagin" the weekly positive or doubtful cases which constitute those giving varying results, would be weeded out by giving negative reactions. Only gross technical errors would interfere with uniform results under these conditions, but is such a reaction worth while? Are not the truly syphilitic cases in the latent stages worthy of detection even though antiluetic treatment may not be given? Should not a reasonable attempt be made to make treatment as thorough as possible? When treatment is being guided by the complement fixation reaction, should not the test be made as sensitive as is possible with practical specificity, in order that a truly positive reaction may be the last symptom to disappear and the first to return if complete sterilization has not been accomplished?

I have not called our new test a standardized test because it must earn that designation by common consent. But experience with it has been favorable, and I am hoping that it may, at least, prove a starting point toward the adoption of a standardized technic. A new antigen and many technical improvements have been included, to give the technic five qualifications as follows: (1) As high degree of sensitiveness as is permissible with practical specificity; (2) technical accuracy and uniformity in results, in so far at least, as positive or negative reactions are concerned (slight variation in the degree of positiveness will occur but these do no harm as long as the primary question of whether a serum does or does not yield a positive or negative reaction is answered); (3) yield a truly quantitative reaction in order to give an index of spirochetic activity and the influence of treatment; (4) be technically simple in order to reduce the minimum of error, and (5) economical of time and materials in so far as this is consistent with the best work. Simplicity is but a relative term. For the inexperienced any technic is apt to be complicated, but for the experienced my new test is simple. It is not a short cut method and has never aimed to be, because too many sources of error require attention and correction to fulfill the primary aim of sensitiveness and specificity.

The new complement fixation test for syphilis has aimed to meet these requirements as follows, a fuller discussion and all technical details being given elsewhere[2]:

I. *The requirement of sensitiveness* by the following procedures:

(a) By using a highly sensitive antigen.

(b) By using relatively large amounts of antigen.

(c) By using relatively large amounts of serum and spinal fluid.

(d) By heating sera for only fifteen minutes at 55° C. instead of for thirty minutes.

(e) By using a mixture of guinea pig complements prepared in a manner tending to increase sensitiveness to fixation.

(f) By mixing serum and antigen for a brief period before the addition of complement.

(g) By using a primary incubation of fifteen to eighteen hours in a refrigerator at 6° to 8° C. plus ten minutes in a water bath.

(h) by close adjustment of the hemolytic system.

(i) By using an anti-sheep or anti-ox hemolytic system, although the test can be conducted with an anti-human system.

(j) By reading the reactions within three hours after the conclusion of the secondary incubation.

II. *The requirement of practical specificity* by:

(a) Close adjustment of the hemolytic system to a primary incubation of fifteen to eighteen hours at 6° to 8° C.

(b) Careful titration of antigen under conditions rendering the dose employed suitable for this kind of primary incubation.

(c) Including numerous and adequate controls.

III. *The requirement of technical accuracy and uniformity in results* by:

(a) Adopting the principle that pipetting relatively large amounts of fluid (0.2 to 1 c.c.) tends to greater accuracy than measuring smaller amounts (less than 0.2 c.c.).

(b) Using a total volume of 3 c.c. with sufficient corpuscles and test-tubes of suitable size to yield clear, sharp, and easily read reactions.

(c) By using a reading scale prepared each time the tests are conducted and with the same reagents.

IV. *The requirement of a true quantitative reaction,* so important in connection with the use of the complement fixation test as a guide and control in treatment, has been met by working out a series of five dilutions of patient's serum and spinal fluid which may be set up rapidly and accurately.

V. *The requirement of simplicity* has been met in so far as experienced serologists are concerned. Simplicity is but a relative term, inasmuch as the simplest technic is a complicated problem for the inexperienced and insufficiently trained worker, whereas a more complicated technic is perfectly simple to the experienced serologist. I am quite sure that my new test can be satisfactorily conducted by any person possessing a working knowledge of the technic of complement fixation.

VI. *The requirement of economy* has been met in so far as materials are concerned; in regard to time the new test is not a short cut method and is not shorter than other methods in general use.

A few lines may be added on the subject of uniformity in results. It must be emphasized that the anticomplementary activity of serum or spinal fluid is very important in relation to reactions, and for this reason tests conducted with portions of the same specimen of blood in different cities cannot be expected to yield absolutely similar results, nor even in the same city, if serologists vary in their methods of preserving blood until the tests are conducted.

Two or more serologists working in the same or different laboratories testing portions of a sample of blood or spinal fluid from one person should agree at least upon the question of positive or negative reactions. In my experience most variation occurs with sera yielding weakly positive or borderline reactions. Slight discrepancies in the reports on the degree of complement fixation must be expected, inasmuch as the personal equation plays an important part in reading the degree of hemolysis, as it does in matching colors in other lines of work. Slight discrepancies of this kind do no harm as long as the primary and fundamental question of whether a serum does or does not yield a positive or negative reaction is untouched, and particularly with sera yielding borderline results.

IS STANDARDIZATION ADVISABLE AND POSSIBLE?—Standardization is desirable if these aims are served and satisfied: The first purpose should be to secure as good a technic as is possible to evolve in the light of our present knowledge. Mere unification of results in Wassermann tests in different laboratories means little or nothing unless the test is technically correct and as sensitive as is possible with practical specificity. Even under these conditions individual variation in the scientific attainments and accuracy of different serologists will ever be modifying factors, if the test aims to be a sensitive one, but I believe standardization is possible under these conditions and my own efforts have been and will continue to be dedicated to that end.

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1. Series of thirty-two papers being published in the Amer. Jour. of Syphilis, beginning 1919, vol. 3, p. 1.
2. Kolmer, J. A.: A New Complement Fixation Test for Syphilis Based Upon the Results of Studies in the Standardization of Technic. Amer. Jour. Syph., 1922, 6, 82.

DISCUSSION

DR. J. A. ELLEGOOD (Wilmington, Del.): May I ask Dr. Kolmer if you would get a positive Wassermann reaction in Vincent's angina?

DR. KOLMER (in closing): Regarding the question of Dr. Ellegood concerning the Wassermann test in Vincent's angina, I may state that in my experience the reaction has always been negative. It is reasonable to expect, in nonsyphilitic spirochetic infections, as Vincent's angina and infectious jaundice, that positive reactions may be found, as is true in frambesia tropica, but practically this is not the case. In those localities where frambesia does not occur, as in the United States, the Wassermann reaction is practically specific for syphilis, although a review of the literature indicates that positive reactions have been described by some one at some time in practically all diseases to which human flesh is heir. In my opinion these positive reactions in nonsyphilitic diseases are largely due to error in technic. However, it is to be borne in mind that in any Wassermann survey of a large number of supposedly nonsyphilitic individuals, a few cases of unrecognized congenital syphilis may be encountered, yielding true positive Wassermann reactions.

EDITORIALS

THE SWEET GIRL GRADUATE

This is the season of the sweet girl graduate. Just why they should all and always be styled sweet is not within our ken, but since some romantic boob in the dim, undiscerning past started the chroniclers off in this vein, we will, with our total lack of originality, have to keep up the expression. And we do this gladly, for in sooth, are they not all sweet? Yea, verily, brother, they are. Now do not be mistaken as to just to whom we refer—it is to the nurses, of course! We have attended their commencements recently, and have been impressed more than ever with the appropriateness of the above appellation. No college graduates in their caps and gowns look half so sweet, so human, or so altogether likable, as do the nurses in their spotless uniforms.

But we are impressed with the further fact that, with few exceptions, the classes that are being graduated are not increasing in size; some of the schools are holding their own, but some others are actually giving to the community a smaller number of graduate nurses than they did even in the dark days of the war period. There are various reasons for this, some of national operation and some of purely local concern. It is not our intent at this time to discuss these reasons; nor the effects. But while the graduating season is fresh in our minds we wish to make a suggestion, not original with us, as to the commencement in Wilmington next year.

The classes that are being graduated from each of the three local hospitals seldom number more than eight or nine, and the total receiving diplomas in any one year seldom exceeds thirty. With three commencements for three institutions, but with only thirty, or less, nurses, we are, it strikes us, pursuing a wasteful policy, and we would suggest that next year there be a combined commencement. This would make a distinct innovation in this city, but one that we feel sure would be well received by the public, by the institutions, by the medical profession, and especially by the nurses themselves, for whom the exercises are given.

This suggestion is made here because there are always some who oppose any change in a given routine, especially if the change is proposed suddenly. With a year to think it over, we can safely assume that any opposition to such a plan can be met; in fact, those to whom the matter has been mentioned have received it as a welcome improvement. Certain it is that the physicians should approve any plan that can save the hospitals money, however little, and at the same time present before our public a function distinctly superior to any similar one in the past.

W. E. B.

PHYSICIANS IN PUBLIC OFFICE

With the recent election of Dr. G. W. K. Forrest as mayor of Wilmington, and the coming appointment by the Governor of four physicians to serve on the newly created Commission of Public Health and Welfare, the medical profession in Delaware is given a wonderful opportunity for public service. Doctors, more than any other professional men, enjoy a personal following, and when that is capitalized into political advantage, they are sure to win out in a political fight.

Yet, it is seldom that the doctor in office takes advantage of his position to give to the community the benefits of his special training. It would seem that with a physician at the head of a city government, for instance, the greatest impetus would be given to all matters pertaining to public health. The sanitary conditions of the city, the hospitals, clinics, medical inspection of the schools, the milk supply, etc., are as a rule dominated by lay interests. Yet, as likely as not a doctor-mayor will devote his energies to the business side of his administration, a side with which he is most familiar, and for which he is the least equipped. No wonder the public is at a loss to know why physicians should be elected to public office, when they are such poor business men.

We congratulate Dr. Forrest on his election and trust that he will establish an enviable record for himself by doing the things which his training will enable him to do best.

A. R.

DELAWARE NEWS ITEMS

A set of new and enlarged sterilizers is being installed in the Homeopathic Hospital, Wilmington.

Dr. and Mrs. Wiliam F. Bonner, Wilmington, are leaving for a trip to the Coast and to the Convention. They will be gone about four weeks.

Dr. Richard R. Spahr, who has been associated with Dr. Dorsey W. Lewis, Middletown, Del., for four years, has gone to Mechanicsburg, Pa., to practice.

A son was born to Dr. and Mrs. Joseph S. McDaniel, of Dover, at the Jefferson Hospital, Philadelphia, on May 16th.

Dr. James Martin, of Magnolia, has been appointed by the Governor a member of the newly-created State Department of Supplies.

Mrs. Jerome D. Niles, wife of Dr. J. D. Niles, of Townsend, has returned home from the Polyclinic Hospital, Philadelphia, where she underwent a successful operation.

Dr. and Mrs. Edward M. Vaughan, of Middletown, are in attendance at the A. M. A. Convention in San Francisco. They will visit Denver, Portland, Seattle, and the Canadian Rockies before they return.

New lecture, class, and demonstration rooms for the nurses have been opened at the Delaware Hospital, Wilmington, making a very distinct addition to the equipment of this institution.

Dr. J. Cardeen Cooper, of Dover, seriously injured his right foot, necessitating a week's rest, by having a large box of drugs fall upon it. Taking his own medicine, as it were!

Rapid progress is being made in the construction of the new St. Francis Hospital, Wilmington. The excavating has been finished, and the foundations and walls are now up half-way to the second floor. The building will care for sixty patients.

Dr. J. B. Derrickson, of Frederica, who has had a severe attack of blood poisoning, due to an infected cut of the foot, has returned from a rest in the pine belt of the Carolinas, and is back at his work, much improved.

Dr. and Mrs. W. Oscar LaMotte, Wilmington, are leaving for a six weeks' trip to the Pacific Coast, where Dr. LaMotte will be the delegate from the Medical Society of Delaware to the Convention of the A. M. A. A visit will be paid also to Dr. LaMotte's brother in Los Angeles, who is an occulist.

Rev. Francis Downs, son of Dr. Presly S. Downs, of Dover, officiated at the laying of the corner stone of the new Presbyterian Church, at Dover, as well as making the official address on that occasion. Dr. Downs is the proud parent of four sons, all of whom have attained positions of honor in their various professions.

Dr. W. T. Chipman has been elected president of the newly organized Chamber of Commerce of Harrington. Harrington is the railroad center of southern Delaware; the Pennsylvania Railroad car shops and repair centers, etc., are located there. It is a live town, and Dr. Chipman must be a real "live wire" to be elected head of its business forum.

The Milford Emergency Hospital, Milford, Delaware, has installed a 1923 Complex Victor X-Ray Machine, a gift of the Caulk Company. Dr. W. R. Pierce, who served as roentgenologist in the Canadian Army during the war, having been transferred from the U. S. Army, Medical Department, is in charge of the x-ray work. The machine is the best in the market and Kent County can now boast of having the most thoroughly equipped x-ray service in the state.

Considerable changes are being made to the interior of the Physicians' and Surgeons' Hospital, Wilmington. The two operating rooms, which were small, are being combined into one room. A new room for minor surgery and accident cases is being made on the first floor. The delivery room has been entirely renovated. Two new diet kitchens are being built on the second and third floors, and new laboratory, pharmacy, and nurses' class and demonstration rooms in the basement. These changes will add considerably to the effectiveness of the hospital.

The U. S. Prohibition Boss, Commissioner Haynes, visited Delaware last month and published the news that the state of Delaware was "bone dry," and also the "driest state in the Union." We are all very glad to learn just exactly "how dry we are," but if our little state is as dry as the honorable gentleman says, every "dry" citizen in all the other states in our dear United States must be wearing bathing suits, for surely the moisture must be up to their necks. Please page Prof. Howard A. Kelly and the Rev. Carlisle Hubbard!

GENERAL NEWS ITEMS

Dr. William J. Mayo, of Rochester, Minn., received an honorary degree of doctor of laws from McGill University on June 11th.

Under the auspices of the Ernst Fuchs Society, the Colorado Ophthalmological Society and the Colorado Otolaryngological Society, a graduate course in ophthalmology and otolaryngology will be held in Denver, July 16 to 28, 1923. There will be daily illustrated lectures, clinics, demonstrations and conferences.

The Seventy-ninth Annual Meeting of the American Psychiatric Association, was held at the Hotel Statler, Detroit, Michigan, June 19, 20, 21 and 22, 1923. Dr. H. W. Mitchell, a member of the Board of Trustees of the Medical Society of the State of Pennsylvania, was president of the Association during 1922-1923.

In connection with the San Francisco meeting of the American Medical Association the American Society for the Control of Cancer provided several additional features. A dinner conference for cancer workers was arranged on June 28th for the purpose of discussing mutual problems and exchanging ideas. The Society also accepted space in the Scientific Exhibit, where a new hand-done exhibit was shown for the first time. The Cancer film, "The Reward of Courage," was shown several times on the motion picture program, and a big public cancer meeting was held on June 24th under the joint auspices of the American Medical Association, the California State Medical Society, and the American Society for the Control of Cancer.

United States Civil Service Examinations.

The United States Civil Service Commission announces the following open competitive examination for Junior Pathologist:

The examination will be held throughout the country on July 25th. It is to fill a vacancy in the Bureau of Mines, Department of the Interior, for duty at Pittsburgh, Pa., at an entrance salary of $1,500 a year, plus the increase of $20 a month, and vacancies in positions requiring similar qualifications.

The duties are to secure by necropsy, specimens of tissue of animals and men, to fix, imbed, section, and stain same and make interpretation of pathological findings. The appointee will be required to carry out routine bacteriological examinations, including growth on culture media, animal inoculation, and recognition of organism; and to assist in investigative and research work being carried out in relation to health hazards in mining and allied industries.

Competitors will be rated on practical questions, and education, training, and experience.

The United States Civil Service Commission announces the following open competitive examination for Junior Medical Officer (Pathologist), $2,000 a year, and Junior Medical Officer (Assistant Anesthetist), $1,000 a year:

The receipt of applications will close July 24th. The examination is to fill vacancies in Freedmen's Hospital, at Washington, D. C., and vacancies in positions requiring similar qualifications. In addition to the basic salary appointees may be allowed the increase of $20 a month granted by Congress.

Applicants must have graduated from a medical school of recognized standing, and have had at least one year's postgraduate internship in a modern and well-equipped hospital with a daily average of not less than 40 patients. For the position of pathologist, applicants must also have had at least six months' experience in laboratory work in biochemistry, histologic technic, gross and clinical pathology and bacteriology, and for the position of assistant anesthetist applicants must also have had at least six months' experience in the administration of general anesthetics.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of U. S. Civil Service Examiners at the post office or custom house in any city.

BOOKS RECEIVED

Tonsillectomy. By means of the Alveolar Eminence of the Mandible and a Guillotine; With a Review of the Collateral Issues. By Greenfield Sluder, M.D., Fellow of the American College of Surgeons and Clinical Professor and Director of the Department of Rhinology, Laryngology and Otology, Washington University School of Medicine, St. Louis, Missouri. With ninety illustrations. St. Louis: C. V. Mosby Company, 1923. Price $5.00.

Epidemiology and Public Health. A Text and Reference Book for Physicians, Medical Students and Health Workers. By Victor C. Vaughan, M.D., LL.D., Emeritus Professor of Hygiene in the University of Michigan. Vol. II. St. Louis: C. V. Mosby Company, 1923. Price $9.00.

Cerebrospinal Fluid in Health and in Disease. By Abraham Levinson, B.S., M.D., Associate in Pediatrics, Northwestern University Medical School, etc. With 69 illustrations, including five color plates. Second edition, thoroughly revised. St. Louis: C. V. Mosby Company, 1923. Price $5.00.

The Tonsils, Faucial, Lingual and Pharyngeal, With Some Account of the Posterior and Lateral Pharyngeal Nodules. By Harry A. Barnes, M.D., Instructor in Laryngology, Harvard Medical School, etc. Second edition, illustrated. St. Louis: C. V. Mosby Co., 1923. Price $5.00.

Optotypes, consisting of test-letters and pictographs for measuring the acuteness of vision. By John Green, M.D., LL.D., Professor of Ophthalmology in St. Louis Medical College (Washington University) 1886 to 1913, and A. E. Ewing, A.M., M.D., Professor Emeritus of

Ophthalmology in Washington University. With 35 engraved plates. St. Louis: C. V. Mosby Company, 1923.

Dreads and Besetting Fears, Including States of Anxiety, Their Causes and Cure. By Tom A. Williams, M.B., C.M. Boston: Little, Brown & Company, 1923. Price $1.75 net.

The Unadjusted Girl, With Cases and Standpoint for Behavior Analysis. By William I. Thomas. Boston: Little, Brown & Company, 1923. Price $3.00 net.

Applied Psychology for Nurses. By Donald A. Laird, Assistant Professor of Psychology, University of Wyoming. Octavo of 236 pages and 49 illustrations. J. B. Lippincott Company: Philadelphia and London. Price $2.50.

Internal Medicine. A Work for the Practicing Physician on Diagnosis and Treatment With a Complete Desk Index in Three Volumes. By James C. Wilson, A.M., M.D., Emeritus Professor of the Practice of Medicine and Clinical Medicine in the Jefferson Medical College and Emeritus Physician to its Hospital; Physician Emeritus to the Pennsylvania Hospital and Physician-in-Chief to the Lankenau Hospital, Philadelphia; and Samuel Bradbury, M.D., of Cornell University Medical College. Illustrated with 427 text illustrations and 14 in color. Philadelphia and London: J. B. Lippincott Company. Price $20.00.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume 44, 1922.

A Textbook of Therapeutics, Including the Essentials of Pharmacology and Materia Media. By A. A. Stevens, A.M., M.D., Professor of Applied Therapeutics in the University of Pennsylvania, Philadelphia. Sixth edition, entirely reset. Octavo of 793 pages. Philadelphia and London: W. B. Saunders Company, 1923. Cloth $6.25 net.

State Board Questions and Answers. By R. Max Goepp, M.D., Professor of Clinical Medicine at the Philadelphia Polyclinic; Assistant Professor of Clinical Medicine, Jefferson Medical College. Fifth Edition, Thoroughly Revised. Octavo volume of 731 pages. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $6.00 net.

The Surgical Clinics of North America, June, 1923, Volume 3, No. 3. San Francisco Number. Published bi-monthly. Philadelphia and London: W. B. Saunders Company. Price per year, $12.00.

New and Nonofficial Remedies, 1923. Containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1923. Chicago: American Medical Association, 535 North Dearborn Street, 1923.

Rake Knitting Patterns, by Bertha Thompson, Organizer and Director of Occupational Therapy and Principal of the Summer School of Occupational Therapy, Woodstock, N. Y. Milwaukee, Wisconsin: The Bruce Publishing Company, 1923. Paper, 69 pages. Price 85c.

BOOK REVIEWS

TEXTBOOK OF ANATOMY AND PHYSIOLOGY, by Elizabeth R. Bundy, M.D., Fifth Edition Revised and Enlarged by Martha Tracy, M.D., Dr. P. H., and Grace Watson, R. N. Philadelphia: P. Blakiston's Sons & Co., 1012 Walnut St. Price $2.50 net.

This book is an admirable exposition of the subject of anatomy and physiology. The subject matter is clearly and concisely presented. The whole of the subjects are well covered and the arrangement is logical. Throughout the entire book the authors point out practical application that may be made of the information that may be obtained by a careful study of the contents.

The reviewer feels that the authors have succeeded in supplying a book that covers the fundamental branches of anatomy and physiology, that is remarkably well adapted to the needs of the pupil nurse as well as of the graduate nurse and all others who desire a practical knowledge of these subjects. G. E. H.

TEXTBOOK OF OPHTHALMOLOGY, by Hofrat Ernst Fuchs, Former Professor of Ophthalmology in The University of Vienna. Authorized translation from the Twelfth German Edition; completely revised and reset, with numerous additions specially supplied by the author and otherwise much enlarged by Alexander Duane, M.D., Surgeon Emeritus, Knapp Memorial Hospital, New York. With 455 illustrations. Philadelphia and London: J. B. Lippincott Company. Price $9.00.

The new Seventh Edition of Professor E. Fuch's Textbook impresses one as being a veritable encyclopedia of information, so completely does it cover the field of ophthalmology, as in no other single volume. Dr. Alexander Duane has thoroughly Americanized this edition by the many references to the work of ophthalmologists in this country. The new arrangement of the subject matter is a decided improvement over older editions, the chapter sequence avoids confusion and tends to simplify the use of this volume as a most valuable work of reference. The numerous revisions and additions in the text represent the very latest advanced thoughts, while the many noteworthy contributions to the literature by European contemporaries of international reputation. E. Treacher Collins, J. Van Der Hoeve, Allvar Gullstrand, R. H. Elliott, Ignacio Barraquer and many others, have been freely quoted. It is noted with regret that Dr. A. Duane does not use the Christian names or initials of the authors in his references. This would avoid confusion in determining to whom credit should be given.

The success of former editions will surely be surpassed by the demand for this new edition of Professor E. Fuch's Textbook, a book needed by every student and practitioner of ophthalmology. G. H. C.

ENLARGEMENT OF THE PROSTATE, by John B. Deaver, M.D., LL.D., Sc.D., F.A.C.S., John Rea Barton Professor of Surgery, University of Pennsylvania; Surgeon-in-Chief to the Lankenau Hospital, Philadelphia. Assisted by Leon Hermann, B.S., M.D., Urologist to the Methodist Episcopal Hospital, Philadelphia; Assistant Surgeon to the Pennsylvania Hospital, Philadelphia; Instructor in Urology, University of Pennsylvania. Second Edition. Philadelphia: P. Blakiston's Son & Co., 1922. Price $7.00.

The exhaustive historical review of the prostate is illuminating and of extreme interest. It is noted that until 1887 the perineal route was the one used for excision of the gland. Since that time suprapubic prostatectomy has become the favorite method.

The anatomy comprises about fifty pages and is worked out in detail. The illustrations are fine and show the extreme care and skill exercised in the dissection of this part of the body.

As to the etiology of benign hypertrophy, the authors frankly confess a "complete ignorance of the cause of this condition" and consequently do not shed any new light on this phase of the trouble, other than that age, social habits and specific infections may be considered as playing a leading rôle in its causation.

Cystoscopy is regarded as essential to a complete diagnosis. However it is contraindicated to a great extent in the aged, where there is present a large amount of residual urine, and in those persons who show a tendency to urethral fever. The technique of vesical cystoscopy is omitted but so far as it relates to the prostatic region it is gone into in detail.

Stress is laid on kidney functional tests "from the standpoint of their application to prostatic cases" and they rely upon "the percentage of elimination of

(Concluded on page xiv.)

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BOOK REVIEWS

(Concluded from page 722.)

phenolsulphonephthalein and the degree of urea retention in the blood" as "the most important criterion of kidney function." The technique of the different tests is given fully.

The question of prognosis is given very serious consideration and is resolved into two leading questions: mortality and final functional results. It is of interest to note that, from statistics, the catheter life of a patient is from four to five years. This seems to be rather short and may only be exceptional, when we find many men who have been using the instrument for a number of years.

To nonoperative treatment considerable space is devoted and much stress is laid on the adoption of regular habits and temperament. "His habits should embrace the happy medium in which alone the path of safety lies." The authors advise against the establishment of a catheter life "except in those cases of the inoperable type" on the ground that it is only palliative and will shorten life.

The treatment by prostatectomy has become so successful that palliative measures are no longer recommended but as a means of preparation for the radical operation. The authors divide the cases for operation into three groups: (1) Those in the initial stage of prostatitis without complication, requiring preliminary treatment—clean cases. (2) The great majority of patients, who, because of complications, require preliminary treatment—infectious cases. (3) When palliative treatment is contraindicated and immediate operation is necessary because of obstruction—emergency cases. About seventy-five pages are devoted to the different types of operations.

The book is a splendid presentation of this peculiar affection of the male about which formerly very little has been written, and is worthy of a place in the library of every practitioner of medicine. I. G. S.

SELECTED PAPERS AND ADDRESSES, by William Williams Keen, M.D., LL.D., Emeritus Professor of Surgery, Jefferson Medical College of Philadelphia. George W. Jacobs & Co., Philadelphia, Publishers.

Dr. Keen has made a selection of subjects upon which he has labored in his long and useful career which demonstrates the protean faculties of this noted surgeon and writer. The Doctor has always been recognized as belonging to the "School Militant," whether in the realm of surgery, vivisection, religion, evolution, war or administration.

In this splendid book Dr. Keen records many valuable points of historic connection between the old and the new age of surgery which he has lived to see accomplished.

The reading of the book, together with the attached bibliography, would in itself constitute a good education in the ethics of the medical profession.

The book is appropriately "dedicated to John Chalmers Da Costa, M.D., S. D. Gross, Professor of Surgery, Jefferson Medical College, Philadelphia. Pupil, Assistant, Colleague, Successor. A token of admiration and affection."

It is well worth reading by the thousands of physicians who have come in personal contact with Dr. Keen as well as the younger generations in medicine who are coming on. A. C. M.

Dr. O. Pine queries: Why the duplication of medical societies in certain big cities? Is it due to the Cæsarian attitude of desiring to be first in a Spanish village rather than second at Rome? What good does medicine derive from the formation of competing bodies which only weaken the mother organization? Why not abolish superfluous, parasitic medical mutual admiration societies?

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ORIGINAL ARTICLES

SYMPOSIUM ON BRAIN TUMOR

DIAGNOSIS OF BRAIN TUMOR*

WILLIAM G. SPILLER, M.D.
PHILADELPHIA, PA.

It is a difficult undertaking to present in fifteen minutes, the time allotted me, a review of the diagnostic features of tumor of the brain, as many pages could be written on this subject. The most I can hope to accomplish is to present a few of the more interesting observations on this subject in a very sketchy manner.

The more common signs of brain tumor are generally recognized. They are those of general increase of intracranial pressure and of focal irritation or focal defect. Under the signs of increased pressure are included headache, choked discs, nausea and vomiting, general convulsions, vertigo, etc. These indicate nothing more than the existence of increased intracranial pressure, and may occur with hydrocephalus, abscess, serous meningitis, encephalitis (especially the epidemic form), etc. The signs of focal irritation or focal defect become of great value in indicating to the surgeon the site of operation. They are often combined, so that the loss of certain function may be associated with increase of other function, but in some cases defect symptoms alone are of focal value, and in other cases irritation symptoms, convulsions or twitching movements may be those on which we have to depend.

There is no doubt that brain tumor is a common disorder, and frequently some other intracranial disturbance must be distinguished which closely resembles tumor clinically. Epidemic encephalitis is occasionally a cause for much confusion. I have known cases of encephalitis in which the diagnosis of tumor had been made, and in one case operation had been performed. The difficulty is usually in the diagnosis of a tumor of the basal parts of the brain. Some of the encephalitic clinical findings—nystagmus, cranial nerve palsies, hemiplegia, swelling of the optic discs—may make the differential diagnosis from basal tumor difficult. The postencephalitic findings may be very numerous and diverse, and include not only mental deterioration but focal symptoms of cranial nerve involvement.

The diagnosis of tumor, as a rule, is not very difficult, but cases come before us in which we cannot decide positively whether a tumor is present or not. Still more numerous are those cases in which we believe a tumor to exist but have no finding which permits localization and operation. I must maintain that even with all the modern helps available the diagnosis of location is not always possible. Various conditions may cause confusion. We may, as in a case at the University Hospital reported by Fay, have such conflicting symptoms as obstruction of the posterior horn of the right lateral ventricle, as though a tumor were occluding this ventricle, associated with right homonymous lateral hemianopsia. This latter sign can be produced only by a lesion of the left visual fibers posterior to the chiasm. Necropsy in this case showed a basal tumor distending to such a degree the middle cerebral artery passing over the left optic tract, that this artery had cut half way through the optic tract like a string, destroying the outer visual fibers some little distance from the tumor.

Another recent puzzling case was one in which sensory and motor defect symptoms suggested a tumor of the right parietal lobe, and these symptoms were associated with right homonymous lateral hemianopsia—again a group of conflicting symptoms. The ventriculogram showed obstruction of the posterior horn of the right lateral ventricle. The tumor was in the base of the right frontal lobe and caused so much upward pressure as to disturb the function of the right motor and parietal cortex, and grew beneath the brain to implicate the left optic tract. Examination of the two cerebral hemispheres showed that the right was considerably larger than the left, on account of overgrowth of neuroglia, and this enlargement entirely occluded the middle and posterior part of the right lateral ventricle.

I called attention in 1914 to this overgrowth of brain tissue associated with tumor, even when the tumor is very small. It is difficult to determine microscopically an overgrowth of neuroglia in such a case, even with a differential neuroglia stain. I want to call attention again to the confusing symptoms which may be caused by such brain enlargement. It probably had much to do with the pressure of the right motor and parietal cortex against the skull and the production of misleading symptoms thereby. It was certainly the cause of the occluded posterior horn of the lateral ventricle and suggested occlusion of the ventricle by tumor, which did not occur. The case shows how careful one must be in the interpretation of ventriculograms and how difficult the interpretation of tumor signs may be. I have known a tumor to be missed at operation by the fraction of an inch from inaccuracy of interpretation of clinical findings.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

X-rays used without injection of air into the cranium are only occasionally of great value in tumor diagnosis. I have seen an enchondroma of the cerebral hemisphere so clearly defined by these rays that the tumor could be found without difficulty at operation performed by Dr. Frazier. I have known a calcified supracellar cyst to be equally well defined by this method, but usually the tumor cannot be photographed by x-rays. The sella turcica and its clinoid processes lend themselves most serviceably to the x-rays, and much valuable information may be derived in this way from the atrophy of these structures. The great increase of intracranial pressure of long duration may be revealed by the x-rays in the atrophy of the inner table of the skull corresponding to the convolutions, as pressure is exerted over the convolutions and not over the fissures, but this finding is more likely to be with hydrocephalus or hydrocephalus associated with tumor, and can exist only in those cases in which the pressure has been long exerted.

The injection of air into the cranium and the x-ray examination of the ventricles by this means may be of diagnostic importance. The method is not to be considered as free from all danger, and it requires a knowledge gained from repeated use of the method to make it one to be employed successfully. In my experience, which I confess to be limited and to which I refer with some diffidence, serious results may occasionally follow the injection of air into the brain. When done successfully considerable light may be thrown on a diagnosis, but there is decided possibility of erroneous interruption of the x-ray findings, as from brain swelling to which I have already referred, from which the walls of a lateral ventricle may be so brought in contact as to prevent the entrance of any air into the posterior horn.

There are cases in which choked disc is the most prominent sign of intracranial pressure and all localizing signs are wanting, or this may be associated with headache and vomiting. The correct diagnosis may seem to be tumor. Sometimes repeated lumbar puncture with removal of 3 to 5 c. cm. of cerebrospinal fluid will cause a rapid subsidence in the choked disc and even a return to normal condition of the optic nerve; but where recovery occurs we are dealing with one of those often puzzling forms of pseudotumor which simulate tumor closely. The condition may be serous meningitis. The diagnosis of a congenital condition of the disc resembling optic neuritis is sometimes made by the ophthalmologist. This diagnosis is admittedly difficult and must be accepted with much reserve. In some cases of demonstrated tumor I have known headache and vomiting to be relieved temporarily by concentrated doses of magnesium sulphate or the administration of sodium chloride by mouth in the method described by Hughson. It would seem that fluid is drawn away from the brain in this way and the temporary relief is not to be despised. It is not a treatment which can be continued indefinitely.

A sixth nerve palsy occurring late is a sign occasionally causing a mistake in focal diagnosis. I have known it to develop with tumors of various regions, as with tumor of the parietal lobe, or of the frontal lobe, or of the parietal occipital region. It may occur whenever the intracranial pressure is greatly increased and is probably produced by pressure at a distance on the nerve. The sixth nerve has the longest intracranial course of any of the cranial nerves, and its paralysis may be of short duration in intracranial tumor. I have known both sixth nerves to be affected in the same case at different times, and the paralysis of one of these nerves may disappear before or soon after the other sixth nerve is paralyzed, and both sixth nerves may recover within a short time. A sixth nerve palsy developing early or associated with paralysis of adjoining cranial nerves has focalizing value, but great caution must be shown in evaluating a sixth nerve palsy developing late in a symptom-complex.

The diagnosis of an angle tumor, i. e., one situated in the depression made by the pons, medulla oblongata and cerebellum, is at times very difficult. The tumors of this region are usually of one type, that of fibroma. The tumor may bear a resemblance to spindle cell sarcoma and a question may arise as to the correct pathological diagnosis, but it is usually a tumor of very gradual development and the pressure from it increases very slowly. It is a well known fact that when a lesion develops slowly in the brain it does not cause the same intensity or extent of symptoms as when it forms rapidly. In the first case the brain shows a capability of readjustment to the altered condition. We may therefore be called upon to diagnose an angle tumor when the symptoms are very slight, even when there is no nerve deafness and no paralysis of the facial nerve, two signs we count on invariably when the pressure of an angle tumor has become sufficiently great. At this stage of development even swelling of the optic nerve may be absent. I have had at least three cases of this kind recently in which, with few symptoms, I have been compelled to depend partly on the findings of the Bárány tests, as reported to me by Dr. Louis Fisher. I regard these tests, in the hands of a trained otologist, as of the greatest value in the diagnosis of an angle tumor. I have not so far obtained much aid from these tests in tumors of other location, but the absence of the characteristic findings of these tests for angle tumor have made me exclude angle tumor where I had previously suspected its presence. Where these tests show complete loss of function of one vestibular nerve, even though the cochlear nerve of the same side is intact and there is no deafness, and there are certain other symptoms, we may suspect angle tumor. One of the most striking cases of this kind has recently come under my observation. A man of middle age developed intense vertigo, so that objects revolved in the same direction before him and he walked with great incoördination. Gradually this vertigo disappeared, but for several months he has had a continuous tinnitus like the buzzing of a swarm of locusts, his head has felt heavy as though he had had too much sleep, he staggers considerably at times in walking, he has had flashes of light before his eyes which he has actually mistaken for lightning, and the Bárány tests show the left vestibular nerve to be without function. He has, therefore, a dead left vestibular nerve with irritation probably of the left cochlear nerve causing tinnitus, and irritation of one or both optic nerves causing flashes of lightning.

An apparently successful removal of an angle tumor is sometimes followed by distressing symptoms. The cause of these is not easily determined. The postoperative condition occasionally may be worse than the preoperative condition, but where tumor of the brain is not removed we know that the patient must certainly become progressively worse and finally perish. What is the cause of increase of symptoms after this operation? The tumor is usually of that variety generally recognized as fibroma or endothelioma. Is is often rather loosely attached and can at times be removed intact. The situation is, however, almost the most dangerous any tumor can have and yet be operable, for the medulla oblongata is least capable of sustaining trauma. Some disturbance of this important structure is necessary in the removal of any angle tumor and it may be that edema of the medulla oblongata follows removal. I have wondered whether irritation of the choroid plexus of the fourth ventricle, with the production of hydrocephalus, might result from removal of an angle tumor.

The temporal lobe of the left side in right-handed people gives definite defect symptoms of tumor located in this region. We are familiar with the word-deafness and word-blindness, and if the growth goes deeply enough into the brain, with right homonymous hemianopsia and possibly right hemiplegia and right hemianesthesia, but these are symptoms usually of later development. Some years ago I spoke of amnesic aphasia, of the inability to get exactly the proper word in speaking, as one of the earliest signs of tumor of the upper left temporal lobe. I have had at least two typical cases of this, with necropsy. The condition has been observed by others, and recently Herrmann has written on the subject. The inability to get the desired word is the first evidence of jargon aphasia, and it precedes any indication of word deafness. The patient may say he has pain in his neck, intending to say in his head. This amnesic aphasia may erroneously be attributed to a lesion of Broca's area, and it is important to remember it is not uncommon from a lesion of the posterior part of the left first temporal convolution.

Focal purulent meningitis may be confused with brain tumor, as I have observed, but the rapid change in symptoms with great increase in their seriousness, should lead to detection of the error; and yet symptoms of tumor may develop suddenly. I have recently seen the first evidence of brain tumor to be suddenly developing Jacksonian convulsion followed by weakness of the affected side, and within two or three weeks by complete paralysis of the affected side. The tumor was found in this case.

Segmental motor paralysis may be an important sign of brain tumor and may also be the cause of confusion in diagnosis. It may require careful observation to decide between a lesion of peripheral nerves and a sharply defined lesion of the brain cortex. Where only a small part of a limb, as the hand or foot, is paralyzed, one may fail to attribute it to a cortical disturbance, and yet the segmental part of a limb is sharply represented in the cerebral cortex. This was the subject of a contribution by the present writer to the Osler memorial volumes, and important cases illustrative of the condition are reported in that paper with references to the literature. As an illustration, a case not included in the paper referred to is mentioned here. A man had paralysis confined to one foot. The occurrence of exaggerated tendon reflexes and convulsions confined to the same limb made the diagnosis of cerebral tumor probable, a diagnosis which I later found had also been entertained by Dr. G. J. Wright of Pittsburgh. Operation was at first declined by the patient, but later was performed by Dr. L. H. Landon of Pittsburgh, and an endothelioma arising from the falx cerebri was found and removed, and the patient is doing well.

It is often difficult to persuade a patient, when the paralysis is of the limited segmental type, to submit to an operation, and yet the early cases are those which afford the best results from operation. I have known the tumor to be so small as to render it inconspicuous at operation. It may be entirely subpial, without elevation above the surface of the surrounding brain and without differentiation by color from the surrounding cerebral tissue, and may readily be overlooked if one is not very careful.

4409 Pine Street.

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THE DIAGNOSIS AND TREATMENT OF BRAIN TUMORS*†

WALTER E. DANDY, M.D.

BALTIMORE, MARYLAND

All lesions become more frequent as our acquaintance with them grows. If we hark back but a very few years, appendicitis was unknown, then very rare, and finally a very common ailment. The same story is true of any number of lesions. The great educator of true perspective is necropsy and operation. Brain tumors are passing through the rare stage because neither necropsy material nor operative inspections have checked mistaken diagnoses. But in a few clinics intensive studies have shown not only that brain tumors are among the most frequent tumors of the body, but during the first six decades, particularly from the second to the fifth decades, tumors are among the most common afflictions of the central nervous system.

The results of the long struggle in the solution of appendicitis should teach us much about the fundamental treatment of brain tumors, and prevent many of the sad chapters in its story when told in later years. Two accomplishments have transformed a prohibitive mortality in the treatment of appendicitis into one which should be practically nil: first and foremost, an early and accurate diagnosis, and second, an early and efficient operative procedure which eradicates the cause.

In the treatment of brain tumors, the same two factors are all-important, and in addition there is the third great factor—*localization* of the tumor. Although the diagnosis and localization of appendicitis are nearly synonymous, the same is far from true in brain tumors. In fact, the localization of brain tumors has been the most difficult phase of this complex neurological problem.

It is doubtless known to you all that tumors as large as one's fist are still compatible with life and without giving the slightest evidence of their situation. For many years it has been possible to know that a patient was afflicted with a tumor, but we have not been able to tell where it was located. With such inadequate information, it is clear that operative results must be very poor. Without accurate information, I should venture the assertion that in the hands of the very best operators, less than one-third of all explorations for brain tumors would actually disclose the tumor at the first operation. In fact, so discouraging have been explorations for tumors of the brain, that, except when the location of the tumor seems clear, the palliative decompressive operation has become more or less routine. Obviously, such treatment is most unsatisfactory. There is only one way to cure a patient with a brain tumor, and that is by a complete extirpation of the growth by operation. Decompressions have been justifiable only because the location of the tumor has been unknown. If the location of the tumor is known, any treatment which delays or is palliative, is no more justifiable than delay or palliation in appendicitis.

Although the rate of growth of brain tumors is variable, a fatal outcome is almost inevitable. But we have many warnings of this impending calamity. Tumors cause headache, destroy vision, produce paralyses, convulsions, speech and mental and other disturbances, and most of these changes are progressive. The great hope for patients afflicted with brain tumors, lies in the earliest possible diagnosis. To do this, it is incumbent upon us to suspect a tumor when any symptom or sign referable to the central nervous system makes its appearance. Fortunately, it is now possible by the use of cerebral pneumography—i, e., roentgenography of the brain after the injection of air into its ventricles or subarachnoid spaces—to diagnose and also to localize practically all brain tumors which cause pressure, and in the early stages of the tumor's growth. This being possible, the problem of handling brain tumors is greatly simplified.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

†From the Department of Surgery of the Johns Hopkins University and Hospital.

The treatment of tumors is now reduced to a single simple formula: complete extirpation when the nature and location of the growth make this possible; and when impossible of removal, then and only then to produce the maximum decompression for palliation. Unfortunately, some brain tumors, by virtue of their infiltrating character, do not permit extirpation. In other instances, removal is precluded because of the invasion of the brain-stem, speech centers, or other vital parts of the brain. There are, however, many nonencapsulated growths in silent areas of the brain which, if detected early, can be completely removed. The so-called silent areas of the brain were formerly the greatest handicaps to cerebral surgery because they prevented diagnosis or localization of the growths owing to the absence of signs or symptoms. Formerly, it was necessary to perform palliative operations until the tumor grew beyond the confines of the silent brain and produced paralyses or other focal destructions of the contiguous brain with recognizable functions. Now these silent areas are the greatest assets for the success of brain surgery; for, the localization now being possible in another way, extirpation of the growth can be done with contiguous silent areas of the brain, when necessary, and still leave the patient without noticeable defects.

I have said that practically all brain tumors should now be localized and at once. Brain tumors give rise to two types of signs and symptoms: (1) localizing symptoms and (2) general pressure symptoms. If the former are present, the localization is automatically made. Their consideration need not detain us. But the overwhelming proportion of brain tumors give rise to so-called pressure symptoms, and it is to the consideration of this difficult problem of localization that I wish particularly to call your attention. As you know, the craniovertebral chamber is a closed and fixed space and its contents—blood, cerebrospinal fluid, and brain tissue—are almost totally incompressible. For this reason, a new growth is tolerated only by a compromise with these intracranial contents, and this compromise gives the warning signs: headache, nausea and vomiting, choked disc, etc.

Probably all brain tumors which produce intracranial pressure, produce (as an expression of this compromise) changes in the size, shape or position of the ventricles and subarachnoid spaces of the brain. If the fluid from these spaces is removed and air is substituted in its place, these changes in size, shape and position will be accurately registered in roentgenograms of the head. It is, therefore, clear that if these alterations are known, the location of the cause which produces them (the tumor) can be deduced. I will now show you a series of lantern slides which will explain the localizations of brain tumors from every part of the brain. In many instances the localizations have been so precise as to permit transcortical incisions of great depth to find the tumor at operation, and often successfully to remove tumors which otherwise could never be found except at necropsy.

I should not wish to leave you with the impression that this is a simple and harmless procedure. Unfortunately, it is the reverse. It is both complicated and dangerous. The interpretation of the air shadows is difficult and is all-dependent on the intimate knowledge of intracranial anatomy and physiology. Its danger is shown by the fact that I have had 3 deaths in my first 100 injections. However, in over 400 since then, there has been none. This is owing to the fact that I have learned how to eliminate the dangers. Air is an irritant. When the ventricular channels are blocked, its absorption is prevented; a sero-sanguinous exudate results from its irritation, and this produces a marked accentuation of pressure symptoms. Many patients are so ill that this additional pressure could not be tolerated. To prevent this complication, the air should be removed as soon as possible after the skiagrams are completed. If the quantity of air injected is large (30 c.c. or more) either the original ventricular fluid or saline solution may be replaced. In safe hands, the procedure is now without great danger. It seems inadvisable, at least at the present time, that a risk so great as the use of air requires, should be assumed except by a competent neurological surgeon.

Lantern slides were then shown as follows:

(1) *Tumors of the frontal lobe.*—The localizations were made by dislocation of both lateral ventricles and the third ventricle away from the tumor (anteroposterior view). Often the homolateral ventricle, and at times also the third ventricle, were oblierated. The third ventricle, when present, takes an oblique instead of a normally upright position (anteroposterior view); ventricular filling defects on the side of the tumor (lateral views).

(2) *Tumors of the temporal and parietal lobes.*—Practically the same pictures as frontal lobe tumors, though with more pronounced filling defects. There may be elevation of the de-

scending horn of the ventricle in temporal lobe tumors. Parietal tumors may dislocate the body of the ventricle downward, broaden its diameter and shorten its height, or narrow its diameter and increase its height, depending on the exact position of the tumor.

(3) *Tumors of the occipital lobe.*—The lateral dislocation of the anterior horns of the ventricle (anteroposterior view, occiput down), is less than in frontal, temporal and parietal tumors, and may even be absent. Filling defects of ventricles and alterations in size, position and shape of the ventricles.

(4) *Ventricular tumors.*—Filling defects in ventricles and evidences of hydrocephalus from closure of the ventricles. A small tumor in the body of the lateral ventricle showed a normal ventricle anterior to the tumor and hydrocephalus of the ventricle posterior to it. The sharp anterior and posterior margins of the tumor were shown by the abrupt lines of termination of the air shadow. A tumor of the third ventricle showed a bilaterally symmetrical hydrocephalus, but with no communication between the two lateral ventricles and with absence of the third ventricle.

(5) *Tumors producing symmetrical dilatation of the lateral ventricles with intercommunication.*—This line of tumors included (1) suprapituitary tumors growing upward and occluding the aqueduct of Sylvius, (2) pineal tumors, (3) tumors contiguous to the pineal and third ventricle, (4) tumors in various parts of the posterior cranial fossa (cerebellum, cerebellopontine angle, brain-stem and fourth ventricle). All of these tumors block the iter or fourth ventricle. In one instance a shadow of a suprapituitary tumor was seen in the air background of the dilated ventricles; its presence could not be detected except in the presence of air. This has been an important finding in many other tumors situated elsewhere. In another case of suprapituitary tumor, the tumor had grown lateralwards and blocked one lateral ventricle and partially oblierated the third ventricle.

A pineal tumor was shown causing dilatation of the ventricles with partial obliteration of the third ventricle, and a large shadow of calcification in the air background.

An endothelioma arising from the leptomeninges near the pineal produced a great hydrocephalus of both lateral ventricles, partial obliteration of the third ventricle, and a great filling defect of the left lateral ventricle.

Various tumors of the posterior cranial fossa produce dilatation of the third and both lateral ventricles. A case of cicatricial closure of the foramen of Magendie was shown (with dilated lateral and third and fourth ventricles). After a new foramen of Magendie had been constructed, the air could be seen in the cisterna magna and the cerebral sulci (indicating that the new foramen was patent several weeks after the operation). The patient has since remained well (now 4 years). Another case was shown in which a tremendously dilated cisterna interpeduncularis extended upward and produced a great filling defect in the left lateral ventricle. Both lateral ventricles were of enormous size owing to the obstruction in the cisterna.

DISCUSSION

OF SYMPOSIUM ON BRAIN TUMORS

Dr. Edward E. Mayer (Pittsburgh, Pa.): In arising at the request of our Chairman to discuss these papers, I beg your indulgence in refraining from any actual discussion. Having for so many years witnessed the thoroughness of Dr. Spiller's work, I recognize that only time limitations have prevented him from a more detailed and minute analysis of brain symptoms. And since Dr. Dandy, who alone can speak to-day with real authority concerning ventriculography, has given so interestingly his conclusions, coupled with such instructive pictures, I am sure you will agree that any discussion by me would be superfluous.

May I, however, stress Dr. Dandy's point that brain tumors are very common, so that physicians must be on the lookout for them? Inasmuch as I have had ventriculographic films taken and had difficulty in interpreting them, I wish to say that Dr. Dandy's pictures have been instructive to me, as I feel sure they have to the entire audience. How much they will be helpful in infiltrating growths and multiple tumors remains for the future to tell. Perhaps others carry away as I do, the impression from the pictures, that not ventriculography but Dr. Dandy's surgical ability has been illuminatingly brought out by his paper.

Dr. Spiller (in closing): I have little to add to what I have said. I admire Dr. Dandy's pictures and think he deserves congratulations for the work he has done by injection of the ventricles with air. The injection must be done with the greatest caution, and the interpretation may be easier to Dr. Dandy than to those who have not had his experience. There is considerable danger of misinterpretation of the findings.

CEREBROSPINAL SYPHILIS*

HENRY PLEASANTS, JR., M.D.
WEST CHESTER, PA.

AN INTENSIVE STUDY OF AN INTERESTING CASE SHOWING UNUSUAL SYMPTOMS, AND ILLUSTRATING THE VALUE OF SPINAL DRAINAGE FOLLOWING THE INTRAVENOUS ADMINISTRATION OF ARSPHENAMIN

Ever since Ehrlich evolved the formula of "606" or salvarsan the medical profession has been striving to determine whether or not this valuable remedy or its modifications is really specific as a cure for syphilis.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

The results of many observers in the past decade have clearly shown that while the symptoms of syphilis, the adenopathies, dermatoses, etc., do quickly subside following the intravenous administration of salvarsan, it is yet to be proved whether or not the disease is actually cured, i. e., whether or not the spirochetes are all killed.

The Wassermann reaction has been an invaluable aid in the diagnosis and treatment of syphilis. But, again, the persistence of a positive Wassermann reaction following intensive treatment has brought up the question as to whether or not this reaction is absolutely dependable. Some cases where the Wassermann has remained positive in spite of a long course of intensive treatment have been termed "Wassermann fast," leaving, however, considerable doubt in the minds of clinicians as to the efficacy of the treatment.

Solomon, in The Archives of Neurology and Psychiatry, Vol. 7, No. 2, February, 1922, gives a very clear résumé of the results of many observers in the treatment of neurosyphilis. He states that there is no uniformity of opinion concerning the value of treatment in the various types of neurosyphilis. There is no definite evidence to show which methods are the most satisfactory; and, furthermore, the majority of the reports concerning treatment were unsatisfactory, for, as he says: "Few patients were treated, and usually treatment was not carried on arduously or to conform with the patient's tolerance for the drugs. In the majority of instances the patients were not followed for a long period after improvement, a criticism often made by those who hold that treatment is of little value."

In view of the above, it would seem that in the study of neurosyphilis the most valuable information is to be obtained by a very intensive study of a comparatively few cases, rather than a superficial study of a very large number of cases. Therefore the following case is cited more as an example of the value of such intensive study. In this case there are many features which are constantly met with in general practice, and which are still mooted points among investigators. It also illustrates so many of the points of frequent failure to secure good results in treatment that it is given in detail:

CASE HISTORY

Patient, C. C., aged 30, white, machinist, married.

Chief complaint: Headache, occipital and general.

Prev. med. hist.: No scarlet fever, no influenza, no typhoid, no pertussis, no diarrhea. Measles in childhood; tonsillitis every fall. General health has been good, but patient states that he has been underweight all of his life. For many years, and up to the present time he has suffered from palmar eczema which has resisted all forms of treatment.

Social history: Normal child. Went to school for six years. Stood average rank in his class. Worked as a machinist for past 15 years. Regular habits. Used alcohol moderately up to two years ago. Denies Neisserian infection. Married in May, 1919. Wife had one miscarriage during the influenza epidemic. Patient had luetic infection in November, 1919. Primary sore and secondary rash.

Family history: Father died of unknown cause after separation from patient's mother. Father was intemperate. No definite history of lues. Mother living and well except for chronic nephritis and cholecystitis. Mother had small epithelioma of nose which yielded to treatment. One sister had double ovariotomy and oöphorectomy some years ago. Her blood Wassermann is negative. Another sister is living and well. There is no history of tuberculosis in the family.

Present illness: Patient was perfectly well up to November, 1919, when he developed a Hunterian sore. There was no known history of exposure. Secondary eruption appeared December, 1919, with definite mucous patches, sore throat and falling hair. Was first examined at skin dispensary of a well-known teaching institution. Later was treated at genito-urinary clinic at same institution. Wassermann at this time was 4 plus. *Treatment:* First series, 10 intravenous injections said to be neosalvarsan. Wassermann then reported "Delayed negative." Second series: 8 injections of neosalvarsan. Wassermann then reported "negative." Third series: 8 injections presumably same solution. Wassermann reported "negative." Fourth series: 8 injections, Wassermann negative.

During this course of treatment the patient began to have headaches. They would be relieved temporarily by the injections of the arsenical, but later the injections merely served to dull the headaches which seemed to come on with greatest violence during the night. Following the injections, the patient would often vomit, and at times become irrational. Altogether about sixty doses of the arsenical were given, but the headaches were increasing steadily in severity, and at the time of examination were almost constant. The patient was in a pitiable condition, evidently suffering very excruciating pain. The summary of the findings at the first office examination in February, 1921, showed: Tachycardia, pulse 142; indicanuria, indican 4 plus; biluria, bile 1 plus; reflexes, exaggerated.

Owing to the evidence of biliary stasis, it was deemed advisable to try the efficacy of biliary drainage after the method of Lyon. This was done March 8, 1921. Bile flowed rather freely under stimulation with magnesium sulphate solution. A-bile clear; B-bile darker, but not inspissated; C-bile clear. Culture of bile showed no streptococci or typhoid group organisms.

Examination of the urine. March 10th showed no indican. Patient reported having had no headache since biliary drainage. Looked much better, but was advised to come to Chester County Hospital for observation and treatment.

Physical Examination

General appearance: Poorly nourished, hair thin, complexion sallow.

Eyes: Pupils react to light and in convergence, but are widely dilated from recent instillation of mydriatic.

Dr. Howard Mellor reports: Hypermetropic astigmatism. No fundus changes. Conjunctivæ suffused.

Nose: No abnormalities noted.

Tongue: Coated, tremulous. Tonsils, not enlarged.

Neck: Cervical glands palpable, thyroid not enlarged.

Chest: Ribs prominent. Expansion limited. Impaired resonance at right apex. Vocal and tactile fremitus increased. No râles or frictions noted.

Heart: Apex impulse visible fifth interspace m. c. line. Precordium moves visibly with each impulse of heart. Heart action very rapid, myocardium poor tone. No murmurs noted. Outline shows slight enlargement to left and also to right of sternum.

Liver outline: Upper border sixth rib. Lower border slightly below costal margin.

Spleen and kidneys not palpable or enlarged demonstrably.

Abdomen: Marked rigidity of upper pole of right rectus muscle over gall-bladder region. No tenderness over region of appendix.

Genitalia: Scar of hunterian sore.

Glandular system: Uniform enlargement of epitrochlears, post-cervicals and inguinals.

Neurological: Patient's station is good. No ataxia noted. At times during a severe headache there has been almost complete inability to articulate. Gait is normal. There is no ataxia. Sensation is normal. The reflexes are definitely exaggerated.

Clinical Analyses

Urine: February 26, 1921: Amber; acid; sp. gr., 1010; albumin, none; sugar, none; indican, 4 plus; acetone, none; bile, 1 plus; no microscopic. March 11, 1921: Amber; acid; sp. gr., 1028; albumin, none; sugar, none; indican, 1 plus; acetone, none; bile, none; casts, none; crystals, calcium oxalate.

Blood: R. B. C., 4,240,000; W. B. C., 7,990; Hb. 80% polynuclear, 75; lymphocyte, 21; mononuclear, 2; eosinophile, 1; transitional, 1.

Blood Wassermann, negative (State Laboratory, No. 15843, Series S-8612).

Spinal fluid: Fluid withdrawn, 20-30 c.c. Considerable pressure. Clear, no flocculi, no sediment. Total cell count: 200 per c.cm. Polynuclear 20%; lymphocyte, 80%; Wassermann, 4 plus; globulins, 4 plus; sugar, negative; tubercle bacilli, negative.

Patient improved greatly after the withdrawal of the spinal fluid. He was kept in bed for several days, and during this time his teeth were examined roentgenologically, disclosing several apical abscesses and an impaction of one molar. Dental treatment was immediately started. A blood Wassermann was taken of the patient's wife, who was about six months' pregnant, and reported negative.

It was hoped that the refraction of the eyes, and the removal of the apical infections would relieve the headaches. For a time this was true, but in a few weeks the headaches began to return with increased severity. Dr. T. H. Weisenburg was then called in consultation and advocated repeated spinal drainage in order to relieve the tension.

Acting upon the suggestions of Dr. Weisenburg, the patient was given weekly spinal drainage for one month. The cell count at the first of these was 220, showing a distinct rise over the previous diagnostic drainage. After this series of drainage, the total cell count fell to 65 per c.cm., but the patient was by no means greatly improved, as his headaches continued to recur in spite of everything. He was then given a course of intramuscular injections of 1 c.c. of 1% biniodid of mercury every three days with no apparent improvement. The spinal Wassermann remained 4 plus. The extraction of an impacted wisdom tooth did relieve the headaches for a short time, but later they returned with great severity. The intravenous injection of 2 gms. sodium iodid in normal saline solution preceding the spinal puncture, was tried with the view to securing the highest iodid action in the spinal fluid. This was entirely unsuccessful. The patient developed severe headache, nausea, backache and general malaise, with more or less severe symptoms of iodism.

The intravenous injection of the arsenicals was deferred at the request of the patient for the reason that during his previous course of treatment he had suffered the most intense reactions after each administration, and it was feared that he had really an idiosyncrasy towards the drug. At last it was decided to return to it, as the man was becoming steadily worse, and his cell count was beginning to rise. It was largely owing to the successful treatment of a severe case of tabes dorsalis by Dr. Edward Kerr of East Downingtown by the combined method of intravenous injection of neoarsphenamin, and spinal puncture that this form of treatment was decided upon.

Following the intravenous administration of 0.9 gms. arsphenamin, a spinal drainage was done in 15 minutes, withdrawing 40-50 c.c. of the fluid under tension. The patient had a moderately severe reaction, consisting of a chill, headache and nausea. This disappeared within a few hours and he stated that he felt infinitely better. The following week he was given 0.9 gms. neoarsphenamin, followed by spinal drainage. The reaction from this was comparatively slight. The cell count had now fallen from 60 to 15 per c.cm. Another treatment with 0.9 gms. neoarsphenamin the following week brought the cell count down to 10. The spinal Wassermann was 2 plus. Globulin negative.

The patient by this time had symptomatically recovered. His headaches had entirely disappeared, and he was able to resume his work as machinist. He was given a respite of four weeks from treatment. At the end of this time he was given a series of three treatments using .09 gms. neoarsphenamin, followed by spinal drainage. One of the latter was unsuccessful in that no fluid was obtained.

About this time the patient's wife was delivered of an eight-and-a-half-pound boy, apparently perfectly normal. The placenta was normal in size and appearance, and the microscopic examination showed no evidence of syphilitic arteritis. The puerperium was without incident. The child flourished on the breast. There was a slight superficial tear of the perineum which was repaired at the time of delivery and which healed immediately.

The final report of the examination of the spinal fluid showed 6 cells per c.cm. Two Wassermanns were made in separate laboratories. The Department of Health Laboratory reported negative. The Chester County Hospital reported: P. H. H., negative; C. H. H., plus-minus. The patient was discharged, and up to the present time, one year later, has had no return of his symptoms.

The foregoing case shows:

(1) The importance of routine examination of the spinal fluid of syphilitics even after an intensive course of treatment and the presence of a negative blood Wassermann.

(2) It illustrates the value of intravenous treatment with neoarsphenamin followed by spinal drainage.

(3) It shows how rapidly the central nervous system may become involved following infection. In this instance the cerebrospinal involvement progressed coincident with a very intensive course of treatment at a well-known clinic.

(4) It shows how it is possible for a patient with active cerebrospinal syphilis to become a parent of an apparently healthy child, and avoid conjugal infection.

(5) It raises a point, however remote, as to whether or not this individual had latent hereditary syphilis, as suggested by the vague history of his father, and the fact that he had suffered from palmar eczema. It is possible that the definite infection lighted up the latent hereditary cerebrospinal lesion. The sincere thanks of the author are extended to Dr. Edward Kerr of East Downingtown for the original suggestion as to the value of the form of treatment adopted; to Dr. T. H. Weisenburg for his nerological study of the case; and to Dr. William Greenfield of the Chester County Hospital for his invaluable and highly accurate pathological work, without which the success of the treatment would have been impossible.

Farmers and Mechanics Trust Bldg.

DISCUSSION

Dr. Theodore H. Weisenburg (Philadelphia, Pa.): Dr. Pleasants' interesting clinical report illustrates the value of careful work even in one case. It has been thought that salvarsan has many advantages over the old line therapy, but for the first time we are given the opportunity to check this up, for some of the cases first treated in this country by salvarsan are now coming to our clinics. These early cases were not treated as intensively as is the custom now, for it will be recalled that in the beginning many claims were made for this drug which have not been borne out by experience. Cases of tabes dorsalis, in which injections have been given once a week or less often, and in which no other therapy was employed, are now coming to our clinics. This would indicate that, at least by the method first employed, the results are no better than they were by the mercury and iodid treatments. However, we shall be better able to give a final opinion as to the value of salvarsan in five or ten years from now, when sufficient time will have elapsed for the development of tabes after more intensive treatment by salvarsan.

In regard to our use of salvarsan, it seems to me that the intravenous administration gives as good results as any, although each case merits individual attention. For example, in the case of Dr. Pleasants it is apparent that spinal drainage following the injection of salvarsan gave the best results. Similarly in other types of cases the spinal method may be the one of choice. This illustrates that the routine method of treatment of neurosyphilis by intravenous injections is not applicable to every case, a factor not always appreciated by those who treat syphilis of the nervous system.

Regarding the number of injections that one may give to cases of tabes and other forms of involvement of the nervous system, I have no hesitancy in giving large doses. For example, in the Polyclinic Hospital where there is a large outpatient syphilis clinic, there are a number of tabetics who have had over 150 injections. These patients seem to have acquired the salvarsan habit, for they come to the dispensary without preparation, get their "shots" and go back to work apparently without harmful results. If they are discharged, they go to some other dispensary, and after being discharged there, return to the Polyclinic for further treatment. Apparently a salvarsan habit is easily formed. In defense of this the patients claim that the "shots" make them feel better.

Dr. Sherman F. Gilpin (Philadelphia, Pa.): The problem of drainage of the cerebrospinal fluid in the treatment of neurosyphilis has been interesting me since 1914 when we began trying it out in the Jefferson Hospital Nervous Clinic. We soon became so well satisfied with the results obtained, that it was adopted as a routine procedure in the treatment of all forms of neurosyphilis and is so used at the present time. I am encouraged when at last some one else has read a paper on the subject and demonstrated the value of drainage of the spinal fluid in this disease.

The case just reported, a case apparently of cerebrospinal syphilis of the interstitial or vascular type, is the kind that once in a while does not yield to the ordinary treatment without drainage of the spinal fluid. I should like to report another case bearing on this point: A young man, infected at the age of 17, was thoroughly treated until his blood Wassermann remained negative. At 24 he was taken into the army, sent to France as a lieutenant, and there given very strenuous mental and physical work. After a few months he suffered from headaches and general ill health. His blood Wassermann was negative though he had the ordinary symtoms of brain syphilis. His fluid Wassermann was found to be plus 4. He was given six treatments of arsphenamin intravenously at weekly intervals. Then one month's rest from arsenic, while he took a course of mercury by inunction, with iodids by mouth. At the end of this period he had a second course of six arsphenamin treatments at weekly intervals. At the end of the treatment his fluid Wassermann was still plus 4. He was then returned to this country, and Major Ayedelotte, under whose care he was, gave him three intravenous treatments followed by drainage of the spinal fluid. His cell count fell rapidly and his Wassermann dropped to plus 2. He was discharged from the army and in about four months came to Jefferson Hospital for treatment. At this time his fluid Wassermann had gone back to plus 4, with a cell count of 75. He was put on mercury by inunction and at weekly intervals given 0.9 gm. neoarsphenamin intravenously, followed at once by thorough drainage of the spinal fluid. The fluid at the eighth treatment showed a negative Wassermann with a cell count of 16. The fluid at the ninth treatment showed a negative Wassermann and 8 cells. Treatment was stopped for three months and the fluid found to be negative both for cells and Wassermann reaction. He then worked for one year in good health and under no treatment. Examination of his spinal fluid at this time showed a negative and he asked me if he dare marry. I told him he could marry with safety so far as I knew; that it was my experience a fluid remaining negative for one year without treatment, did not become positive again even in tabes, but that my experience was limited to no longer than five years.

In the treatment of neurosyphilis and especially of tabes and paresis I cannot agree with Dr. Weisenburg in so free use of arsphenamin preparations. I do not know the patients at the Polyclinic Hospital but I see both tabes and paresis cases suffer from too much arsenic given intravenously. They sometimes die and do so quickly. In these chronic cases not only the nerve tissue but the whole organism is involved and we must be careful not to give more arsenic than their diseased organs can take care of by way of elimination. The longest cure, if it may be so called, of tabes in my experience, is a patient with negative fluid for well on to five years with no treatment. She was given mercury only for eighteen months with thirty drainages of the spinal fluid. She is in good health at the present time. Another case with negative fluid and in good health for the past two years had mercury and fifty spinal drainages over a period of twenty-two months. They seem to be as nearly cured as any form of syphilis. I have a case of paresis in good health for seven years. He has been treated by mercury and his fluid has been drained about one hundred times. His Wassermann is still plus 4. I never have seen any treatment produce a negative Wassermann of the spinal fluid in a case of paresis.

Dr. Horace V. Pike (Danville, Pa.): I do not desire to be considered as pessimistic in my viewpoint as to the prognosis of cases of neurosyphilis nor as advocating therapeutic nihilism in the treatment of this class of patients, but I cannot help but feel that with those of us who are able to study a large number of these cases and especially that type that reaches State hospitals for the insane, it is exceedingly questionable as to how much can be accomplished by treatment irrespective of the type of therapy used. For a number of years I have had the opportunity of studying neurosyphilis in all of its types and in all of its stages and I cannot help but feel, with Dr. Weisenburg, that in spite of the claims made for arsenicals, it makes but very little difference whether we follow out our treatment along the old lines with mercury and iodids or whether we administer intensive treatment with salvarsan, neosalvarsan with or without spinal drainage. Unquestionably, the drainage of the spinal canal will make many patients more comfortable and often relieve the distressing headache, but when definite neurological signs have made their appearance I have never seen them altered by any type of treatment, nor have I seen the serological findings entirely disappear. The Wassermann may become negative, the cell count may be markedly diminished but the reaction to the colloidal gold solution still remains; and while the case reported by Dr. Pleasants has apparently shown a cessation of all unpleasant symptoms, we must not forget that even without treatment many cases of neurosyphilis will present definite periods of remission lasting equally as long as in the case which he reports. His method of treatment is certainly commendable and further observation should be made on a large number of patients with the hope that in this method has been found a way whereby the agents now used intravenously may reach the focus of infection in the central nervous system.

Dr. L. M. Gates (Scranton, Pa.): I think this case that has been recited to us impressed us with several points: One is, that they missed their greatest opportunity in this case and we should take that lesson, when a person comes to us with a lesion suspicious of syphilis that we should get busy, make examination of the lesion, make sure that it is syphilis, not call it "soft chancre" and miss the opportunity of curing for all time. I believe that is the only time that it is possible to cure the patient entirely.

A patient in contact with syphilis came to me with a very innocent-looking lesion of the vulva, but she had enlarged glands on both sides. I sent her for a blood test which proved mildly positive. Active treatment was instituted and she has not shown any signs of syphilis since.

The paper also shows we should examine the spinal fluid in cases that have lues and do not show it in the blood as they may have trouble that may crop out later. It shows the cause of failure because we do not treat early enough before the spirochetes have gotten in deeper tissues beyond the reach of the remedy. Did the author of this paper ever find out the size of doses given in the early stages of this case? Whether they were small or intensively large? I believe that large does to the limit of tolerance, must be better than repeated small doses.

Dr. Thomas C. Stellwagen (Philadelphia, Pa.): This discussion reminds me of what Record said—"Syphilis once, syphilis always." I have had a series of communications from Dr. M—— at the Lock Hospital, London. He has been taken to task for his views on spirochetes, but he has published a series of statistics on the use of colloids in conjunction with salvarsan treatment. It would be interesting to read a communication in which he discusses intramin, which is a combination of colloidal silver, iodin and manganese. I should like to hear whether Dr. Weisenburg has had any experience with it. I believe these cases are practically hopeless.

Dr. Pleasants, Jr. (in closing): I was extremely interested in hearing the parallel case recited by Dr. Gilpin, the first one that I have heard.

Regarding the danger in treatment of tabes, we had a very interesting experience with a patient who had tabes and who was given intensive treatment by one of the physicians at our hospital. He nearly died on the table. I think we want to go very slowly in giving combined arsenical treatment with spinal drainage to our tabetic patients.

Regarding the dosage that my case received at the clinic, I have no way of telling, because he came to me one and one-half years after treatment, but he described his symptoms following the treatment as being very, very severe. He said that a great many men who went to that clinic at that time would fall in the street and have to be carried back. He complained of intense vomiting for hours afterwards. I should say that the treatment carried out at that time was intense.

This patient showed something that Solomon called attention to in a review of the literature, namely, the rarity of patients suffering from cutaneous manifestations, and from cerebrospinal syphilis at the same time. It has been demonstrated that there is a selective action of the spirochete for the skin and mucous membrane, or for the cerebrospinal system. This was apparently a coincident condition where both were affected to a very marked degree.

PERITONITIS FOLLOWING OPERATION FOR CHRONIC CHOLECYSTITIS OF INFLUENZAL ORIGIN*

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Within the past two years, I have had two cases of fatal postoperative peritonitis following cholecystectomy for chronic cholecystitis, as follows:

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

J. B., aged 39, carpenter, admitted February 28, 1921, complaining of pain in right side of abdomen. Onset one year ago. Nature of attacks: intense pain in right upper abdomen which was relieved slightly by lying on right side and drawing up the knees. Pain was often worse after eating, on an average of one-half hour after meal was taken. No relation to size or nature of meal. No history of jaundice.

Typhoid fever 14 years ago. Pneumonia 9 years ago. Influenza in May, 1920, and patient said that he had not been well since this attack. No history of tonsillitis. No operations. No cough, dyspnea, edema, palpitation or cardiac distress. Appetite fair. Patient was constipated and had been troubled with hemorrhoids. No urinary symptoms. No history of venereal disease or alcoholism. Patient did not sleep well. Joints got sore and ached but there was no swelling.

P. E.: No jaundice. Examination of heart and lungs negative. Abdominal examination negative except for marked tenderness in right hypochondrium in usual location of gall-bladder. Less tenderness present in region of McBurney's point. Temperature normal. Urine negative. Blood pressure 108-75.

Diagnosis: Chronic cholecystitis.

Operation: March 3, 1921. High right rectus incision. Gall-bladder gray, tense and emptied poorly. No stones felt. There were extensive adhesions between the duodenum and omentum and the gall-bladder and under surface of liver. These were divided. Cystic duct and vessels exposed and divided and gall-bladder removed. Gall-bladder fossa was closed with suture and drain inserted. Appendix was fibrous and contained fecoliths. There were some adhesions at its base. It was removed and incision closed. Patient left operating room in good condition. Culture of bile negative.

Patient had the usual postoperative discomforts for 36 hours, when he began to vomit and pulse rate was increased. He rapidly became worse, pulse becoming more rapid and of poorer quality and abdomen distended. Temperature 101°. Cyanosis, rapid thready pulse, cold clammy extremities, and death on the fourth day ensued. No autopsy.

The clinical picture was that of a streptococcus perionitis. We attributed this to some surgical accident, but the relation of the onset of gall-bladder symptoms to an attack of influenza made an impression that was not forgotten. Six months later the second case was encountered.

Mrs. M. H., aged 51. Admitted complaining of pains in knees and legs and some pain and discomfort in right upper abdomen.

No serious illnesses except influenza 1½ years ago, at which time patient was very ill with distention and persistent vomiting. She had not been well since then, having general aches and pains and in the last 6 months these had been especially marked in knees and legs. Patient was nervous and did not sleep well. Some dyspnea on walking. Some palpitation and occasionally edema of feet and legs. No cough. Appetite fairly good. No constipation. Had feeling of weight in stomach soon after eating and a sense of fulness. Feeling of pain or discomfort at times in upper right quadrant of abdomen referred to the back. No history of definite jaundice, but her daughter states that at times her skin had a yellowish tint. Patient passed through menopause one year before. Had one child living and well.

P. E.: On abdominal examination there was quite marked tenderness in region of gall-bladder, associated with considerable muscular resistance. No masses felt. Liver edge palpable, 2 f. b. below costal margin. There was some tenderness over McBurney's point. Two small polyps projected from cervical canal and a fibroid size of a hen egg was present in posterior wall of uterus. Temperature normal. Urine negative except for trace of albumin. Systolic blood pressure 134.

Operation: September 10, 1921. Excision of polypi of cervix with cautery, appendectomy and cholecystectomy with drainage. Gall-bladder was tense and emptied poorly. Duodenum and omentum densely adherent to under surface of gall-bladder. Culture of bile negative.

On day after operation, pulse was increased in rate, patient was nauseated and complained of being "so tired." The next day patient was vomiting and was distended. Pulse rapid and of poor quality. Hands cold and perspiring. Patient had no pain but complained of great weakness. She rapidly became worse and died 3 days after operation. Temperature rose to 107° before death. The abdomen was opened by the interne after death and he reported the presence of distended injected intestines and thin seropurulent fluid, thereby establishing the diagnosis of peritonitis. Unfortunately no culture of fluid was made. The clinical impression was that patient died of a streptococcus peritonitis.

Bearing in mind the previous case, the development of a second case with so similar a history made us feel that this was more than a coincidence. These cases are reported here with the hope of learning in the discussion if other surgeons have had similar experiences. I believe that there is a relation between the onset of the gall-bladder symptoms during an attack of influenza and the subsequent development of fatal peritonitis following cholecystectomy, but I have no bacteriological proof of this impression.

Many of the serious complications of influenza were due to the streptococcus hemolyticus and it is possible that in these cases we were dealing with latent microbism, the organisms being present in the gall-bladder and possibly the adhesions, and taking on increased activity in the presence of operative trauma, blood-clot and ligated tissues. Gynecologists and abdominal surgeons have known for a long time that occasionally a fatal streptococcus peritonitis will occur in operations on the pelvic organs years after a puerperal pelvic infection. Curtiss, in grinding and culturing the fallopian tubes removed at operation, found that the gonoccus lives but a short time in the tubes, but that the streptococcus lives there for years. During the late war, severe streptococcus infections and even septicemias were frequent sequelæ to early secondary operations on apparently healed tissues, so that finally in the British Army secondary operations were not considered as safe within six months of the time of complete healing of the wound.

Rosenau has demonstrated nonhemolytic streptococci in the gall-bladder walls after destroying the mucosa, and found them the most common cause of gall-bladder infections. Since these two cases, we have been systematically grinding and culturing all of the gall-bladders removed, with very interesting results, but we have had no more cases of postoperative peritonitis nor have we in any case recovered a hemolytic streptococcus, so that no light is thrown on the point in question.

If these are really instances of latent microbism, two important questions arise, namely, "how can we determine this beforehand, and when is it safe to operate?" The characteristic point in the history was the dating of symptoms from an attack of influenza and the fact that the patients presented definite evidence of an active chronic infection since the influenza, apart from the local symptoms of cholecystitis. Chronic fatigue and aches and pains of a neuritic or arthritic nature were prominent and the patients were below par in a general way; so that given a case of chronic cholecystitis, the symptoms of which began with an attack of influenza and following which the patient has not been well, complaining of fatigue and general aches and pains, one should bear in mind the unhappy outcome in the above cases, 1 and 1½ years respectively after the onset of the illness. As to when it is safe to operate, I do not know.

I am reporting these cases as purely clinical observations for discussion. That the patients died of postoperative peritonitis, there is no question. There is no bacteriologic proof of the organisms present but the clinical picture was that of streptococcus peritonitis. As to the origin of the infection, the fact that the symptoms of cholecystitis in both cases date from attacks of influenza is very suggestive. The second patient, while vomiting persistently during her postoperative peritonitis, spoke of the measures used to control this same sort of vomiting and distension when she had the influenza. That the peritonitis was due to a slip in technic is of course possible, and that it occurred in patients with cholecystitis dating from influenza may be a mere coincidence, but in looking up our cholecystectomies for chronic gall-bladder disease, we find no similar cases. In conversation with other surgeons I have learned of two similar cases and I also learned that it is the impression of some of them at least, that peritonitis in abdominal operations in general was much more frequent in the first few months after the influenza epidemic than at other times.

I realize that without bacteriologic proof our deductions are speculative, but it is in a section such as this that we may be able to learn the experience and observations of others, and possibly determine the correctness or incorrectness of the conclusions. The proof would be the recovery of the same organism that produces the peritonitis from the tissues removed at operation. I would greatly appreciate a report of the occurrence of similar cases among the members of this section and particularly the bacteriologic findings.

DISCUSSION

Dr. Henry Pleasants, Jr. (West Chester, Pa.): This paper brings up a rather interesting subject on which I have been working for the last two or three years. In many of our cases who present evidence of chronic cholecystitis I have been routinely doing a biliary drainage. I do not want to enter into the discussion of that, but a great many of these cases have given me evidence as to whether or not the bile is actually infected. The technic is not without fault, but in many instances I have been able to isolate organisms which gave us a clue as to the infection. The bacillus coli anaërogenes has been found in a certain proportion of cases we have drained, and I think where patients are likely to be a bad operative risk it is a safe procedure to attempt Lyons' method.

Dr. Alfred C. Wood (Philadelphia, Pa.): The chair has had no experience such as Dr. Cashman reports, but in regard to the general subject, we know, first, that streptococcus peritonitis is very usually fatal. Some cases may recover. As you know, the habit of the streptococcus is to travel; it does not stop, and for that reason we do not get adhesions limiting the infection in cases of streptococcal peritonitis, as we do in peritonitis from some other infections. So that when you have to deal with streptococcal infection of the peritoneum you have a very serious condition to deal with. There is one point, however, that recalls the earlier days of the surgery of the appendix when some of the more conservative, and perhaps safer surgeons, recognized certain inflammatory conditions around the appendix that led them to believe that it would be much safer to drain the focus of infection than to make an extended search to find and remove the appendix. The same thought occurred to me as Dr. Cashman was reading. If the surgeon can recognize the type of infection by the appearance at operation, might it not be well merely to expose the gall-bladder, pack it off and drain rather than to take the chance of spreading a virulent infection by the manipulation necessary to remove the gall-bladder, even though a secondary operation might be required later in some cases?

Dr. Cashman (in closing): In regard to the Lyons test, even if you can get the bile from the gall-bladder it has been definitely shown that you may have in chronic infection of gall-bladder sterile bile, but organisms in the wall. In regard to Dr. Wood's suggestions with respect to drainage, these were not acute cases. They started with influenza, but I operated on them one and a half years afterward. I believe that is one solution if you could pick out these cases that will terminate in peritonitis—to open the gall-bladder and drain, and possibly remove the gall-bladder later. The difficulty is to pick out such cases. I simply report these cases and call your attention to what happened to my two cases of cholecystitis, which originally started in an attack of influenza.

THE ESSENTIAL NATURE OF EPILEPSY*

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Whatever its cause may be, epilepsy, as we know, expresses itself essentially through the nervous system. There is no part of the cerebrospinal-sympathetic mechanism which may not be involved in the symptomatology. The range of functional activity of this system is immeasurable, including as it does, in addition to the purely vegetative and sensorimotor, all mental and emotional activity. The variety and intricacy of the symptoms, therefore, which may appear in epilepsy are extraordinarily extensive, implicating as they may, any function of the nervous organization. The disease picture will vary with the stage of development of the nervous organism. In infancy and early childhood the channels of expression are much more limited than will be the case later when mental and other reflex organization has become more elaborated.

In order to get at the essential nature of epilepsy we must take into account the general underlying difference in function of the two primary divisions of the nervous system—the involuntary system, known as the sympathetic, or autonomic system, and the voluntary system known as the cerebrospinal, or projicient system. There must be, in the healthy individual, harmonious integration between the functions of these two primary divisions of the nervous system, and also healthy integration among the various activities of each separate system. These facts are emphasized because epilepsy seems to present a peculiar interruption in this necessary harmony of integration. The autonomic, or involuntary system, as we know, has to do with vegetative activities, controlling such involuntary functions as circulation, digestion and respiration. The cerebrospinal, or voluntary system, on the other hand, controls the volitional activities of the individual, represented largely in the functions of the great voluntary muscular system. The instinctive and emotional side of mental life is apparently under the domination, to a great extent, of the autonomic system with its endocrine, or ductless gland extensions.

It is this system, the autonomic, which almost entirely controls the activities of the infant organism. If we consider the manifestations which are more or less specifically associated with true epilepsy from the earliest days of life, and follow these through the years as the organism advances in age and elaboration of function, we can better appreciate the essentially nervous character of this disease. Such a study will enable us to make clearer distinctions in that obscure symptomatology where there can so easily be doubt as to whether the picture presents epilepsy, or some other nervous disease such as dementia præcox or hysteria. The infant organism is primarily engaged in the business of nutrition and growth, purely vegetative functions, under the control of the autonomic system. The psychic, or higher cerebral functioning, exists in infancy, in a most rudimentary form, as do also those finely integrated sensory and motor reflex activities which develop with the growth and needs of the organism.

The spasm or infantile convulsion is the earliest conspicuous symptom linked up with epilepsy. The cortical and corticospinal tracts and centers, which are destined to exercise marked control over the voluntary muscular system, are as yet but poorly developed, partly unsheathed, and naturally vulnerable to toxic and other disturbing causes. It would seem that the spasm is an indication of a lack of, or breakdown in the coördinating balance which normally exists between the two systems; and the assumption is that the corticospinal system is either inherently weak and vulnerable, or that this weakness has been acquired through malnutrition, toxicity, or a cerebropathy such as would follow prolonged labor or difficult instrumental delivery. Whatever the cause, the cortex is unable to maintain the stabilizing control which we attribute to it. The weakness may present itself as epileptic in the typical convulsive seizure. Sometimes the precipitating cause of the convulsion may be readily discoverable in intestinal intoxication, malnutrition, etc. These are the more favorable cases. If such cause cannot be discovered, or if convulsions persist in spite of its discovery and correction, the case is probably one of true epilepsy. The fact that infantile convulsions may have existed and that no adequate cause was found, and that epilepsy did not develop in later life, does not necessarily indicate that the infantile spasm was not epileptic in character. It is not at all inconceivable that such a predisposition may be overcome by the organism, just as we see predispositions overcome in other somatic and psychic diseases. In connection with the infantile spasm it is urgently important to observe any accompanying or intercurrent psychic disturbance. Even at this early age, if there is evidence of obliteration or obscuring of consciousness observable in the more or less fixed stare and immobile pupils, and blank facial expression, there is strong evidence that the phenomenon is epileptic in nature. If such "psychic absence" be noted between convulsive attacks, there is little doubt of the presence of epilepsy.

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As the child advances in age the functioning of the various nervous mechanisms becomes more evident. The individual should assume increasing independence and voluntary control. One of the first functions by which we can judge of such progress being made, is the facility with which the child learns to control bowel and bladder. During infancy these functions have been entirely involuntary and mechanical. The time arrives when they must come under the domination of the voluntary system to a great extent. If this does not occur in orderly fashion it is evidenced by bed-wetting continuing in spite of the usual training measures adopted. Such enuresis speaks for a lack of proper integration between the voluntary and involuntary systems—a lack of control by the higher centers. It occurs mostly at night when the higher cerebral centers are in abeyance, and the regulation of these sphincter centers becomes more easily dominated by the autonomic system. Taken along with other symptoms which we have learned to associate particularly with true epilepsy, enuresis (or nycturia) is a symptom of considerable importance; it speaks for an inability on the part of the organism properly to handle its functions, and to adapt itself to the necessities of existence—conditions which are peculiarly true of epilepsy throughout all its manifestations. The observation already made in regard to the infantile spasm is equally true of bed wetting; namely, that the later normal development of the individual who has suffered from bed-wetting in childhood, does not indicate that the symptom may not have been epileptic in nature. The organism having again, as in the spasm-pathology, righted itself, has overcome a morbid predisposition.

When the bed-wetting is of epileptic etiology, it is an expression of the petit mal attack, easily observed. In this it differs from those cases of petit mal, occurring especially at night, which are not accompanied by such easily demonstrable evidence, and which often exist for years without being observed before the grand mal attack makes its appearance. These are the cases in which the grand mal attack seems to appear suddenly and mysteriously out of a clear sky without cause or reason; the truth of the matter is that the petit mal has gone on unobserved.

Wherever we see a tendency towards persistency of autonomic activities—evidence of continued domination of the individual by the sympathetic nervous system—there is need to be suspicious of the development of epilepsy or of dementia præcox. Sleep-walking, while not in itself sufficient to be looked upon with great alarm, nevertheless is evidence of failure of perfectly healthy development between the various parts of the central nervous system. It can quite easily be an evidence of an epileptic constitution.

One of the great difficulties in diagnosing this disease is the fact that the symptoms may go on for years unnoticed. I have been able to secure a history of definite attacks of petit mal in individuals in whom they had been considered of no significance, but in whom they had constituted preliminary evidence of the disease which asserted itself in grosser form later on.

A year ago a child was brought to me with a history of grand mal attacks occurring over a period of three months. The parents insisted that the child had shown no anomalous condition previous to the onset of these attacks. However, upon close questioning, it was learned that during a period of a year and one-half preceding the attacks the parents would be frequently disturbed during the night by a queer sucking sound made by the child. (Autonomic reproduction of the sucking movements of infancy.) On such occasions they would find the child sitting up in bed with a dazed expression, and with the mouth and tongue still going through the motions of sucking. Then she would come to herself, and go quickly into a heavy sleep. It was further learned that this child had always been asocial, inclined to stay to herself, and unable, without marked exhibitions of temper, to have her desires blocked.

In many instances where there is no such obvious evidence of the petit mal attack as in the case just cited, the character anomolies peculiar to the disease may point the way to diagnosis. These character changes, or anomolies, show that the disease process has involved the mental or psychic side of the nervous system and are concomitant with changes or inherent pathology in brain cell and fiber. We must remember always that the organism is a unit. If we bear in mind that normal development of the character and mental apparatus is just as dependent upon healthy growth and integration of the higher reflex mechanism as the normal function of the bladder is dependent upon the healthy integration of the lower reflex arcs presiding over such function, we can readily understand that these character changes, or anomalies, may be as significant in the nervous pathology of epilepsy as is the manifestation of bed-wetting.

It is this anomolous development of the emotional side of the psyche, expressing itself in character deviations, which so peculiarly stamps the so-called epileptic constitution. Among the more constant character deviations we find marked obstinacy, irritability and unprovoked exhibitions of temper. These may be seen from early infancy. As childhood comes on and social adaptations are demanded, further character anomalies are seen in the increasing selfishness, cruelty, mendacity, impulsiveness, and a general inability to conform to the accepted standards of order and convention. At a later period of development we often find marked religiosity, moodiness and a general superficiality in the realm of the feelings and emotions, added to the character picture.

Constitutional epileptic character anomolies seem to exist and develop as an integral part of the symptomatology. They exist independently of the rapidly progressive mental dilapidation, or dementing process, which we often see in epileptics where the grand mal seizure is more or less violent and frequent. In these latter, the rapid deterioration is, I believe, for the most part, caused by the organic damage sustained by the brain as a result of the capillary engorgements and ecchymotic hemorrhages incident to the convulsion. When this dementing process is thus precipitated, the already existing developmental character anomolies naturally come out in stronger relief.

There are cases of epilepsy which seem to be ushered in at puberty or during adolescence, or even later, by the sudden appearance of major convulsions. This happens at times in individuals in whom it is extremely difficult to demonstrate either marked character anomolies, or other evidence of the person having been previously epileptic. Such cases are relatively rare, and in some of them I think we may assume that nocturnal petit mal attacks have existed previously, and have never been noted. In my experience, this assumption is strengthened by the fact that the grand mal attack, when it does come, has been invariably, in its first attacks, of the nocturnal type. In individuals in whom we have demonstrated no antecedent clinical petit mal, this nocturnal grand mal may soon be followed by attacks occurring at any time. Again, in these suddenly developing cases in later life, we can very often demonstrate definite endocrine disturbance, usually pituitary or thyroid; and, of course, we are all familiar with the cases where uremic and vascular changes may be the precipitating factors. These cases bring us into the symptomatic types of epilepsy, with which we are not concerned in this paper, except to separate from them those which have already shown a marked epileptic predisposition, and in whom these super-added lesions have made the latent disease apparent. The stress of puberty and adolescence likewise is frequently the signal for the appearance of grand mal attacks in individuals who have previously exhibited one or more of such symptoms as infantile spasms, bed-wetting, night terrors, sleep-walking and character changes above mentioned.

The adolescent period brings out the inherent epileptic weakness in strikingly the same manner that puberty or adolescence brings out in the predisposed individual, latent dementia præcox or hysteria. When in dementia præcox we elicit a history of such pre-adolescent qualities as the shut-in or asocial seclusive personality described by Meyer, excessive scrupulosity, indecision, marked suggestibility, etc., we recognize these as early pathognomonic forerunners of the disease. In hysteria, as well, we find an equally well-defined pre-symptomatology, indicating the hysterical personality. This highly emotional, oversensitive, neurotic individual, is familiar to us all, and we are not surprised at the later development of major hysterical symptoms in such a case.

If we bear in mind what happens in a grand mal convulsion of known origin, such as occurs in uremia, or during an infectious disease, we are presented with data which enable us to understand the nervous mechanism back of the convulsion in true epilepsy. In the convulsion of uremic or toxic etiology, we know that the brain cortex is seriously affected; and we believe that the convulsion supervenes mainly because of the crippling of the controlling effect of the cortex and the upper neurons over the entire voluntary system. There is an apparent identity in mechanism of such a toxic convulsion with that of true epilepsy. It would seem, then, that we have demonstrated in this convulsion of toxic origin, the same kind of nervous dysfunction which supervenes in true epilepsy because of developmental or inherent instability of the corticospinal system. This inherent instability may be revealed through innumerable causes. If we carry the analogy further, and take a typical example of epilepsy of the Jacksonian type—one in which there is irritation of a portion of the motor cortex by reason of a tumor or depressed fracture—we see a local paralyzing effect, observable in the tonic and clonic spasm of an extremity, or isolated muscle group. This is a demonstration of epileptic mechanism, generally without loss of consciousness, produced by suspension of control in a limited area of the cortex. In a uremic convulsion, on the other hand, we have a similar mechanism, with loss of consciousness produced by suspension of control in a widespread area of the cortex. If we remember that when a lesion such as a tumor is located in a position of the brain other than that involving the motor system, particularly the frontal area, we may have attacks involving consciousness precisely similar to the psychic equivalent attacks which occur in true epilepsy, we have a working hypothesis of the essential neuropathology underlying the psychic attack. This attack would seem to be due, in the main, to a focal dysfunctioning of a portion of the brain, probably frontal. In both essential epilepsy and that of true Jacksonian character we know that the aura which precipitates, or introduces, the attack may be either psychic or motor in type. In either case, where cortical control is entirely removed, we have an explanation for those peculiar autonomic and automatic activities, which lend such variety to the epileptic seizure, in the fact that the instinctive submerged or subconscious activities, ordinarily suppressed and controlled by the higher cortical centers, break through at this time of cortical abeyance. These automatic processes, at times psychic and again chiefly motor, may present themselves independently (constituting an attack) occurring in and constituting the aura, or coming out during the major convulsion or following it, and may be correlated with more or less transient abeyance of various segments of cortical control, or with involvement of the cortex as a whole.

DISCUSSION

Dr. George W. Smeltz (Pittsburgh, Pa.): I have been very much interested in the study of Dr. Wholey's paper, and the method by which he presents to us anew this old and time-worn subject of epilepsy.

Like so many other conditions involving consciousness and producing conduct disorders, epilepsy has furnished for ages a fertile soil out of which grew all manner of superstition as evidenced historically by the many erroneous and bizarre ideas concerning its interpretation.

In more recent times the scientific approach to the problem of epilepsy has taken place from almost every conceivable angle, until indeed there is little remaining of the human organism which has not at some time or another come under suspicion as being the offending member, and now finally after a long series of scientific trials with many errors, we still find ourselves sufficiently ignorant as to the true nature of this disease.

This, I believe, has been due, in part, to the failure in marshalling all of the already known factors involved in the epileptic picture, into some such broader concept as has been set forth in Dr. Wholey's paper.

In this connection the doctor launches us at once upon the nervous substrata as being the great participating factor in the epileptic manifestation, pointing out roughly the nervous system's two main functional divisions and indicating, as he has, that in the epileptic syndrome there is a disturbance somewhere somehow, between the interactive balance of these two systems.

When we consider that the nervous system, taken as a whole, is, after all, nothing more than a great integrative mechanism—that is, a complicated system of wiring up, so to speak, of all of the component parts of the organism into a coöperative life unity, it becomes plain that such a profound and universal organic reaction as takes place, for example, in the grand mal attack could not occur except as the result of some cross-sectioning influence on this neutral background upon which Dr. Wholey takes his stand.

In stressing the essential nervous character of this disease, as set forth in his paper, the doctor has laid the anatomical and physiological foundations for that still broader kinetic concept, as formulated by Dr. L. Pierce Clarke, namely, that epilepsy represents "a life reaction disorder."

Now such a reaction can be considered primarily only in terms of energy, and as such, represents all of the dynamic forces of the organism. The nervous system not being an energy producer itself, functions only in properly balancing, coördinating and integrating the forces of the organism as they stream through the lower vegetative levels to the higher sensorimotor and psychic levels.

Now what bearing does this dysfunction between the different levels of the nervous system have, as pointed out by Dr. Wholey, when considered in connection with the dynamics of the organism, in offering an explanation of the epileptic phenomenon?

A dysfunction at any particular level within the nervous mechanism would result not only in the blocking, but also in the accumulation of energy below such level. The intensity of such accumulation would be in direct proportion to the higher systems' inability to absorb and properly distribute the energies pouring in from below, until such a point of intensity is reached as to make further accumulations incompatible with the life of the organism, and discharge must take place, as it does, at a lower biological level. This, it would seem, is what occurs in the so-called epileptic fit.

From a biological standpoint it would seem reasonable, therefore, to infer, as Dr. Wholey has, that one of the principal vulnerable points in the functional activity of the organism should be at that level of interaction between the two main divisions of the nervous system—the autonomic or involuntary system and the cerebrospinal, or voluntary system. The latter, however, is an outgrowth of the former and represents a more recently evolved and for that reason a less well perfected mechanism. It stands out as one of the more radical lines of departure, the *new* from the *old*, both in structure and function.

It is at these points of departure, where new and untried functions are being acquired, that one may reasonably look to as the potential points in the production of epilepsy. So it is at birth and throughout early infancy, when there is suddenly thrust upon the organism the necessity for utilizing the new and untried channel of energy intake, such, for example, as the newly established functions of the alimentary tract.

At this period, as Dr. Wholey observes, there is little functional development of the higher centers and practically none on the psychic level. Which means that the child's first real vital contact with the outside world is by way of the respiratory and alimentary tracts. In these newly acquired vegetative functions one may reasonably expect difficulties which may be at least potential factors in the production of the epileptic reaction. But this does not mean that a gastro-intestinal disturbance is the predominating cause of epilepsy. While experience would indicate that it is not an uncommon factor in infancy, it must, however, be remembered that there is a constant shifting to new lines of departure all along the pathway of growth and development, requiring new and sometimes radical adjustments; as at puberty, adolescence and the changes incident to the involutionary period, together with many internal and external factors, as mentioned by Dr. Wholey, and other influences acting on up through the higher psychic levels and on out into the environment itself.

This latter statement, I know, is not in accord with the opinion of most authorities on epilepsy. But I am fully convinced, nevertheless, from my own experience with soldiers, both in the army and since, that, other things being equal, the so-called normally constituted individual may react in an epileptic way when faced with those radical environmental departures that pertained to the lives of many while facing conditions as they were at the front. The mechanism is just the same, and just as real as that having to do with the organic deviations within the organism itself.

Dr. Wholey's paper opens up so many points for thought and discussion, as for example, character anomalies, which too, are in keeping with the theory of faulty distribution of energy on the psychic level, the relationship in mechanism to other types of life reaction disorders as dementia præcox and the lesser reaction, hysteria. But time does not permit more than the mere mention of these!

In conclusion we may observe further that Dr. Wholey has not given us a lead to anything very definite or encouraging to which we may tie for the more practical purposes of treatment. And yet in another sense this is the most important inference to be drawn from his discussion. For it is obvious that there could not be anything like a universal panacea that would be at all in keeping with the broad mechanistic concept with which he explains the nature of epilepsy.

The range of etiological possibilities is great, and all of the factors therein need to be carefully evaluated and correlated if possible. But too often harm comes to the epileptic through the hands of those who would remove the cause of the fit, or at least suppress the fit at any cost as though that were the whole problem in the cure of epilepsy.

Dr. J. P. Crozer Griffith (Philadelphia, Pa.): It seems to me that the neurologists and the pediatrists view from an entirely different standpoint this question of the development of epilepsy in infancy. The neurologist has cases coming to him of undoubted epilepsy, and in tracing them back he finds that some of them appear to have begun in infancy; and from this he is disposed to draw the conclusion that epilepsy is a disease dating from this time of life. The pediatrist, on the other hand, sees a host of children who had convulsions in early life and never later, and he knows he cannot call such cases epileptic.

Why do not adults, when they suffer, for instance, from some digestive disturbance, develop a convulsion? That they do not, we know; while there are numbers of infants and children who do so suffer. It is clear that there must be something in the element of the time of life which is a predisposing factor; and that there is something essentially different between the convulsions of early life and those which are seen later and are denominated epilepsy is beyond doubt. The question is, can we find out what this is? I think we can do so very well. There exists in early life the well-known condition called "spasmophilia," in which there is a disposition to the development of convulsions or a convulsive condition, from very slight causes. In this diathesis there exists a deficiency in the calcium content of the blood. As the child grows older this spasmophilia disappears, and the tendency to convulsions ceases. It is, of course, perfectly possible that some of the convulsive subjects are in reality suffering from an early epileptic condition, although this is something which requires further proof. What is certain, however, is that the ordinary spasmophilic convulsions cease with advancing age.

Dr. E. E. Mayer (Pittsburgh, Pa.): Every physician is interested in the epileptic, and naturally takes up this problem in the way he is accustomed to look upon disease. Dr. Griffith introduces his comments upon Dr. Wholey's paper with the statement that the neurologist and the pediatrician speak different languages. It is true that we do not know the basic facts about the epilepsies. But it is also true that no physician misunderstands another when we speak of their clinical symptoms. These we readily visualize. To me, therefore, the language is not a different one.

I do not see any real difference between Dr. Wholey's views and those of Dr. Griffith, as each is simply taking up a different phase of the question. Admitting that deficient calcium brings on convulsions, why does it not do so in all children who have a deficiency of calcium? Why does the deficient calcium produce those hyperkinetic results on the part of the brain rind which we call convulsions?

That question Dr. Wholey has taken up. He is not ruling out a chemical change as a causative factor, but from a biological point of view is trying to conceive what is happening. I might even presume to say that this is necessary, inasmuch as there are other causes for epileptiform attacks besides an altered calcium coefficient. A spasmophile liability may mean much or little to a physician. To me it does not cover the whole problem. The phylogenetic factors which make for physiological differences cannot be ignored. In no set of diseases, it seems to me, are they more important than in the epilepsies. Spasmophilia does not explain every type of epilepsy. Is it not, therefore, proper to try to find out what in the cortex of the brain is responsible for convulsive seizures?

Dr. A. G. Mitchell (Philadelphia, Pa.): I did not intend to discuss this paper. There are, however, several points about the question of convulsions in infancy which have been of great interest to me. The first thing is the great number of children who have convulsions. It seems to me quite evident that we cannot blame all these convulsions on epilepsy. It is an outstanding fact that a great many infants and children have convulsions who never develop epilepsy. This fact must be explained.

Another fact which is a definite clinical observation is that convulsions are not at all frequent in the first six months of life but are frequent after that time and up to two years of age. Certainly, we cannot blame this age incidence upon imperfect development of the nervous system, because if this were the only reason, convulsions should be more common in the first six months of life than thereafter. Epilepsy, to me, is an indefinite thing etiologically, whereas the condition which we speak of as spasmophilia has a quite definite explanation. If we remember that there are certain salts which act as nervous depressants, we can readily understand that if the body contains less of these salts than normally should be present, we should expect a condition of hyperexcitability of the nervous system. This is what happens in the spasmophilic subject. There is a dimunition of the calcium, and because of a lack of its depressant action, the child is prone to convulsions. Of course, it should be remembered that spasmophilia does not always express itself in convulsions; the symptoms may be the laryngospasm or tetany. I cannot go into the question of symptomotology and the diagnosis by electrical reactions.

At the Children's Hospital in Philadelphia we have studied a number of children who have had convulsions without a definite organic cause and we have followed these children for a period of two or three years and found that they do not have convulsions after they have passed the spasmophilic age. It does not seem fair to me to consider an infant who has convulsions as an epileptic, unless there is a very strong family history to substantiate this and unless study reveals that the child is not spasmophilic.

Dr. John H. W. Rhein (Philadelphia, Pa.): I have been very much interested in this discussion because it deals with the subject of convulsions in children from two angles, namely that of the neurologist and the pediatrist. The pediatrist sees these cases early, while the neurologist only sees those which have not proved to be simply expressions of spasmophilia, and the cases come under his observation at a later period. I have seen cases which I regarded as epilepsy which from the history would have been regarded, I am sure, in the early stages of the disease as spasmophilia and which seemed, beyond peradventure or doubt, cases of epilepsy when they finally arrived under my observation at the age of four or five or later.

When there are recurrent convulsions in infants and young children, where reflex causes can be eliminated and calcium elimination is not changed and there is no organic disease to account for the convulsions, it is proper, I believe, to regard these cases as very likely to develop into epilepsy if the recurrent convulsions cannot be stopped. It is of the greatest importance that the recurrence of convulsive attacks should be broken up in order to avoid the habit of convulsions.

Dr. Percival Nicholson (Ardmore, Pa.): As far as I can see, the whole crux of the matter is that pediatrists see a large number of cases with convulsions which are not subsequently proved to be epilepics. These cases the neurologist never sees. If they were treated for spasmophilia a number of them, at least, would never arrive at the stage when they would be seen by the neurologist. I have seen a large number of these cases which had very definite convulsions, and which had gotten over them entirely by treatment with calcium chloride.

Dr. Rhein says, "What can you do with spasmophyliacs?" I would give them large doses of calcium chloride and get their nutrition to its highest efficiency, and the question would be largely solved as to whether they were affected with spasmophilia or whether they would go on to true epilepsy.

Dr. Wholey (in closing): The discussion has taken a rather different turn from that which I thought my paper would suggest. It seems to have centered largely about the question as to whether convulsions mean epilepsy or not. I had thought that my paper was sufficiently clear in the statement that a convulsion, or spasm is not in itself sufficient evidence to indicate epilepsy. It was my purpose to direct attention to the type of individual constitutionally disposed in his nervous mechanisms to reactions of an epileptic character. These reactions may be in response to a great variety of causes—inherent imbalance between the various components of the nervous system, toxic causes, psychic or emotional barriers to adaptation, etc.

In the child's early life, before its mental faculties and emotional equipment have sufficiently developed to be capable of expressing noticeable epileptic reactions, we are largely dependent for our evidence of epilepsy upon the gross spasmodic upheaval. This manifestation, whether essentially epileptic or not, represents a break in the integrated, harmonious nervous activity which is characteristic of normal functioning. It represents a breakdown in the organisms' ability to dispose of energy in an orderly way. If this disruption is found to be of perverted biochemical etiology, as that observed in spasmophilia, we do not, of course, label the child as epileptic, but we must remember that he has reacted in a way which suggests a possible inherent epileptic trend or tendency, even though the nature of his spasms appears to be essentially different from that characteristic of true epilepsy. The separation of that group of cases which can rightly be classified as spasmophiliac marks another advance in our understanding of spasmodic reactions and incidentally further clears the field for the study of epilepsy. It is important, however, to guard against being lulled into a feeling of security by overstressing the spasmophiliac conception. The demarcation should be and I think can be fairly sharply drawn in the majority of cases.

The observation of Dr. Mitchell regarding the comparative infrequency of spasms during the first six months of infancy is probably due to the fact that most mothers are able to supply the nursing infant with nourishment adequate in quality and quantity for this length of time. This period of six months marks the average time when extra stress is placed upon the infant's nervous system because of a break-down in proper nourishment, etc., and spasms represent the inability of the organism to handle the situation.

In dealing with epilepsy we frequently discover causes, such as endocrine imbalance, the correction of which often produces a very marked cessation of at least the convulsive seizures. Such factors unfortunately are usually precipitating agents in an individual already possessing the epileptic predisposition. The purpose of my paper has been to arouse more interest in the understanding of this predisposition, or background of epilepsy and to suggest some of the possible nervous mechanisms underlying the disease and its symptoms. Time will not allow further discussion of the other points raised, but I believe that what I have said covers the chief questions brought up in the discussions.

REPORT OF A CASE OF RAYNAUD'S DISEASE IN A CHILD*

ALFRED HAND, M.D., and JAMES J. REILLY, M.D.

PHILADELPHIA, PA.

Case 1: Geo. H., 5 years old, colored, was admitted to our service at the Children's Hospital

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Scranton Session, October 4, 1922.

April 16, 1922, having pain in the fingers and toes, with blackish discoloration. The boy had previously been under the occasional observation of the physicians in the outpatient department, the first visit having been made when he was six months old because of snuffles. At his ninth visit, shortly after he was a year old, a Wassermann test was made with a strongly positive result. A month later he was brought with acute cervical adenitis, and after ten months with chronic conjunctivitis. In his third year he was seen three times with eczema, and later for a second degree burn. The history was also obtained, on admission, that in 1920, when about three years of age he had had measles, mumps and whooping-cough.

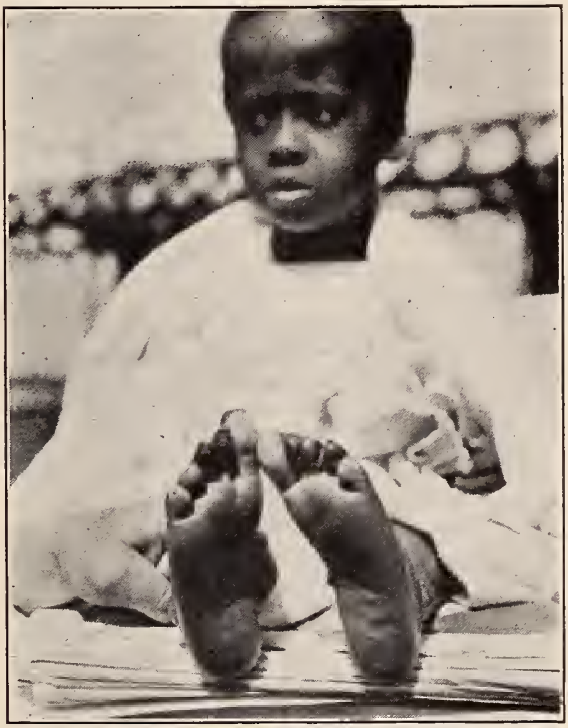
As for the family history, the mother reported no miscarriage; one child by the first, and three by the second husband, all of them living, the patient being next to the youngest. Other important items in this connection, which could not be elicited at first, will be given later.

The day before his admission, the patient got up from bed, put on his shoes and walked down stairs. A few minutes later, his grandmother, who is his caretaker, heard him crying and saw him sit down and take off his shoes. The toes were then seen to be discolored, ranging from a slate to a dead black hue, with an area of redness immediately adjacent proximally. According to a friend who saw him then and accompanied him to the hospital the next day, the black discoloration was increasing in extent; and a similar condition had been present in the fingers of both hands each morning (4/15 and 4/16) for about an hour. During the discoloration the fingers were cold. Handling of them did not cause the boy to complain; but even a light touch on the toes, which felt very cold, caused instant crying.

Examination on admission showed a gangrenous appearance of the first four toes of each foot with a small black area on the inner side of the left little toe, the little toe of the right foot appearing normal; the color of the affected regions was a bluish-grey, forming a striking contrast with the brown skin of the negro. For 4 1/2 cm. on the dorsum of the left foot, and a little further on the right, the bluish-grey color extended up, with mottling of red areas, to a band of redness, 1 cm. broad, which stretched across the foot. The sole showed a distinct pink discoloration half way to the heel. Pulsations could be felt easily in the anterior and posterior tibial arteries of each leg.

The cervical, axillary and inguinal glands were sufficiently enlarged to be palpated. The skin of the hands had a parchment-like, wrinkled appearance. The lungs were clear but there was poor expansion at the left base. There were no heart-murmurs but a distinct thrill could be felt over the body of the heart. The spleen could not be felt. The liver was enlarged, extending 7 cm. below the costal margin in the midclavicular line, and the edge of the left lobe could be felt at the level of the umbilicus. The urine was obtained immediately and tested for sugar, with a negative reaction. There was a faint trace of albumin with about ten leukocytes to each field under the high power; no casts; specific gravity, 1015; reaction, acid.

A blood-count gave red cells, 4,190,000; white cells, 15,500; hb., 64%. The differential count showed neutrophiles 59%, lymphocytes 28%, large mononuclears 2%, transitionals 9%, eosinophiles 1%, basophiles 1%. A blood-culture showed no growth in five days' incubation. The Wassermann reaction was strongly positive.



Raynand's disease; one month after onset.

At the time of admission there was fever, with a maximum of 102°, for 36 hours, when it subsided to normal and remained so for nearly four weeks. When we first saw the boy, it seemed as though there would be considerable loss of tissue (nearly all of the toes and perhaps part of each foot) from the gangrenous process; but thirty hours later a faint degree of improvement was noticed, consisting of a reddish brown mottling, appearing first on the plantar surface of the great toes. This improvement progressed very slowly but steadily during the next three months and it was a novel experience for all of us to see areas that had been dead-black for weeks slowly regain normal color.

Four days after admission, the skin of the hands began to be exfoliated and a desquamation was found to be starting all over the body. It was impossible to get any history of exposure to scarlet fever and examination of the other children at home was negative, but this did not prevent us from making a positive diagnosis of the disease and isolating the patient at once. Confirmation of this diagnosis was recently obtained by one of us (R.) when seeing the patient at home, the mother then admitting that she had not told us the truth for fear the boy would not be admitted to the hospital, but that shortly before the start of the gangrene, two uncles, 12 and 14 years old, had been taken from the house to the Municipal Hospital with scarlet fever.

While the improvement in the local condition was slow, it was sufficiently advanced in two weeks for the surgeons to say that it was no longer necessary to consider the possibility of surgical intervention being needed. The toes could now be handled without pain, and although the skin was coal-black over most of the toes, the affected areas were steadily lessening.

One month after admission a severe intercurrent Klebs-Loeffler infection rendered it necessary to send him to the Municipal Hospital for 2 1/2 weeks. At the end of this time he was returned to us in good condition, the left foot showing no evidence of gangrene, but over the formerly blackened areas the skin was unpigmented and almost white. On the right foot the second and third toes had black caps of gangrenous skin over the pulpy parts of the toes, a little pus being pressed out from under the cap on the third toe. It was a month later before these were detached, a slight loss in bulk being noticeable in the tips of the toes.

Before maintaining the provisional diagnosis of Raynaud's disease, made when the patient was first seen, it was necessary to know more exactly what Raynaud included under the term "symmetrical gangrene," and the first article consulted was the masterly one by Osler in his "Modern Medicine." This led us to persist in the diagnosis, and a recent exhaustive story of the literature makes us feel that the case is rightly classed in that group which Raynaud described as having its cause in a faulty innervation of the capillary vessels (cette espèce de gangrène a sa cause dans un vice d'innervation des vaisseaux capillaires) and not dependent upon senile, syphilitic or other endarteritis, thrombosis, embolism, diabetes or the adynamia following wasting diseases. The main features of the symptoms are their intermittent appearance and their symmetry; and the case described above presented both of these, the fingers of both hands having shown local syncope on the first and second days for an hour at a time and the distribution on these as well as on the feet being symmetrical.

It will be well, at this point, to treat for a moment the relationship between the symmetrical gangrene of our patient and the coexistent scarlet fever and hereditary syphilis. With regard to the acute infectious diseases (scarlet, typhoid, typhus, etc.) in the course of which Raynaud's disease has been seen, Cassirer in his classic monograph gives a thorough discussion, disagreeing with those who hold that the Raynaud syndrome is not a disease *sui generis* but is always based on some other "soil" prepared by infectious diseases or by a neurosis or by organic nervous diseases. Cassirer holds that it is hardly right to class these as typical cases, because they may depend on some change or other in the composition of the blood of which we have at present no knowledge, and that it is better to put them in the group called by Monro, "Raynaud's disease due to a morbid blood state." There are two reasons why, in the present case, it would seem that the relationship between the scarlet fever and the Raynaud's disease was only coincidental, not causal; the first, a theoretical one, is that if there was a causal relationship in this case, then Raynaud's disease ought to be a much more frequent complication of scarlet fever than has yet appeared, especially when the great incidence of both diseases in the first decade of life is considered (Raynaud himself calling his disease "juvenile gangrene"); the second, probably of greater weight, is that two other members of the family (illustrating the family predisposition observed by some authors) have had symptoms of Raynaud's disease without any history of scarlet fever. The notes of these cases are as follows:

Case II: William H., 2½ years old, younger brother of Case I, was seen on April 19, 1922, and examined for evidences of scarlet faver, with a negative result. The fingers of both hands were moderately cyanotic and had been painful. This condition had always been noted in him on cold days. He was admitted to the hospital and kept under observation, without any further symptoms developing.

Case III: John H., 8½ years, brother of Cases I and II, was seen by one of us (R.) at the Philadelphia General Hospital. He was admitted to this institution February 12, 1918, at the age of 4 years, with a diagnosis of gangrene of all the toes and left hand. The history was that in 1918 he had an attack starting like George's, which involved all the toes and left hand. Ten days after admission, beginning gangrene of the right hand was noted. Spontaneous amputation of right foot occurred three weeks after entering hospital. On March 28, 1918, amputation of left foot and both hands was done in an attempt to check the disease process. Gangrene of all the stumps necessitated reamputation three weeks later. On December 28, 1919, a gangrenous condition of the tip of the nose was noted. The Wassermann was positive. A recent conversation with patient's mother elicited the information that John has enjoyed good health for the past two years.

The relationship between the hereditary lues in these cases (both parents have positive Wassermanns) and the development of Raynaud's disease is more difficult of evaluation and, as Cassirer remarks; "single cases have a very varied significance." With the exception of snuffles in Case I during infancy, none of the three children present any signs of syphilis and the diagnosis is therefore a Wassermann one. Mercurial treatment in Case I could not be pushed during the scarlatinal desquamation for obvious reasons, but it was deemed safe to administer the soluble bichlorid in dose of 1/100 grain three times a day, keeping careful watch on the renal function. After the patient's return from the Municipal Hospital, convalescent from diphtheria, half-drachm inunctions were given once a day for five weeks and were well tolerated but were without influence on the Wassermann reaction. Those who think that congenital syphilis exerts an influence in the development of Raynaud's disease, speak of the possibility of changes in the minute blood vessels and attribute the ultimate mechanism to these changes; but this does not explain the intermittency and the symmetry which, as has been stated, are essential to the diagnosis. It must be borne in mind that the majority of cases of Raynaud's disease thus far reported have been antecedent to the Wassermann test. It is desirable, as Tridon remarks in his Paris Thesis, that henceforth all cases of Raynaud's disease should have a Wassermann test made as a routine procedure. In time, then, safe conclusions may be drawn; but at present, according to Castellino and Cardi, in 306 cases syphilis was present in 22, or 7%. The existence of a syphilitic change in the small blood vessels would, if Raynaud's own description is to stand, exclude all of those cases from the category of his disease; but it is conceivable that the syphilitic infection could produce its influence in a way harmonious with Raynaud's specifications, i. e., by a toxic action on the vasomotor centers making them susceptible to the external reflex stimulation (e. g., cold).

DISCUSSION

Dr. E. L. Kiesel (Scranton, Pa.): When one considers Raynaud's disease as undefined pathology brought about by a vasomotor neurosis without known anatomical basis, it is almost self-evident that the cause of this vasomotor instability is unknown.

Dr. Hand and Dr. Reilly think that congenital syphilis does bring about such a condition.

Tredon, in his report of Raynaud's disease in 39 cases in children, found but one patient suffering with lues. Munro's and Cassirer's statistics are similar. In Buchanan's review of the histories of 67 patients at the Mayo Clinic, all gave negative histories for syphilis and all had negative blood Wassermann reactions. Barlow, in reporting a case suspected of having hereditary syphilis states that there are so many cases in which syphilis can be excluded that at most we can only reckon it as one among many other favoring conditions.

It has been frequently noted that asthma, angioneurotic edema and migraine occur simultaneously with Raynaud's disease. The relationship is so close that many consider these to be symptoms of Raynaud's. The association of Raynaud's with these spastic conditions might (perhaps) be explained by Eppinger and Hess' study of the reciprocal relation of the vagotonic and sympathetic system. Eppinger and Hess draw the following conclusions from their researches:

Under normal conditions a reciprocal relation exists between the vagotonic and sympathetic systems. A disturbance in the action of either system brings about a change in the other. This change in the latter accounts for the transient character of these spastic conditions.

The internal secretions are correlated in order to maintain a proper influence on the vagotonic or sympathetic systems. The internal secretions are differentiated simply in their selective action on the tissues, adrenalin stimulating the entire sympathetic system, the remaining secretions possessing a more individual action. The existence in the body of a substance (hormone) possessing properties antagonistic to adrenalin is very probable. In cases of angioneurotic edema and asthma, I have found that a hypodermic injection of adrenalin chloride will give prompt relief. As this is only a temporary measure it will be necessary to go farther and seek that agent which stimulates the antagonistic nervous system in some ways or diminishes its action in others before we have made any headway. Whether this agent is a protein substance acting dirently on the nervous system, or whether the glands of internal secretion are the leading factor, is still an unsolved problem.

Recent observations tend to prove that Raynaud's disease also occurs internally. Let me quote as an example, a case which occurred in Scranton:

A baby, eight months old, presenting all the symptoms of intussusception and so diagnosed, was sent to the hospital for operation. At the time of operation spastic ileus was found. A close inspection of the small intestine revealed a tonic spasm of all the smooth muscle, including that of the blood vessels. The tissues were pale and bloodless and presented a perfect example of local syncope. It is very probable that the spastic ileus was caused by a tetanic condition of the sympathetic nerve, thus causing a contraction of the gut and blood vessels.

Dr. Percival Nicholson (Ardmore, Pa.): I recently reported before the Philadelphia Pediatric Society the case of a boy four months of age suffering with typical Raynaud's disease. Cyanosis was very marked from the finger tips to the elbows in both arms, and from the toes to the knees in both legs. He was a well-nourished child. The aunt of this child, having been a trained nurse, early noted paleness and coldness of the extremities long before the condition progressed to the stage of cyanosis. The child had a negative Wassermann and no symptoms except attacks of marked cyanosis and coldness of the extremities initiated by minor reflex influences on the superficial surface, causing local contraction of the superficial blood vessels. This particular child was treated during attacks by a method which was advocated by Barlow—one extremity at a time was immersed in a tepid solution of salt water. One pole of the galvanic current was placed in the solution and one over the extremity above the cyanosis and the child given as many miliamperes as it could stand. The child reacted very promptly to the treatment, which relieved the attacks. The attacks recurred, but became less marked until at present there are none.

I had the pleasure of seeing this case which Dr. Hand and Dr. Reilly have reported, and I think the symptoms and physical findings definitely point to its being Raynaud's disease. It has the characteristics of Raynaud's gangrene. There are two types of gangrene in Raynaud's disease—one in which blebs are formed, and the other in which the area simply becomes indurated and dark in color and dries up. In both of these types it is surprising how small an amount of damage is done when the eschar is removed, as in the case reported by Hand and Reilly.

There have been positive Wassermanns reported in a number of cases of Raynaud's disease, probably not directly causing, but certainly closely associated with Raynaud's disease.

While there have been a number of cases in children of Raynaud's disease, it is not a common disease. The average occurrence of Raynaud's disease is about one to three thousand. Osler reported in 20,000 cases, 19 cases of Raynaud's disease. I think there are a very large number of cases of Raynaud's disease, however, that have not been reported and the number is probably much higher than given in these statistics.

A logical form of treatment is the administration of calcium chloride, as a rather prominent symptom of Raynaud's disease is the irritability of the vasomotor center. Most cases clear up and do very well; the prognosis is almost always good.

I have, myself, some doubt as to the last case Dr. Reilly reported being a true Raynaud's disease, for three reasons: (1) The rapid appearance of the gangrene; (2) the gangrene being so very great in extent, which is not characteristic of the ordinary Raynaud's disease; and (3) the subsequent extensive and progressive involvement.

Dr. Hand (in closing): We did not intend to say that Raynaud's disease is a common disease of childhood, this being the first case that we have seen, but its greatest incidence is in childhood, as Raynaud emphasized in his original thesis, a copy of which is here shown, one of his illustrations bearing a striking similarity to the photographs of our patient now in the hands of those here present.

As to the relationship the syphilitic infection in our patient and in his brothers bears to the occurrence of Raynaud's disease, we endeavored to refrain from expressing a positive opinion, as we do not see how this question can be settled. Castellino and Cardi collected 306 cases, 22 of which were syphilitic—a rather small percentage if syphilis has any causal influence—and A. J. Buch reports from the Mayo Clinic 67 cases, all with negative Wassermanns.

Dr. Reilly (in closing): Dr. Kiesel has spoken of a condition known as internal Raynaud's disease. Personally, I have never seen this condition, and Dr. Hand also told me that he has never seen it. As to whether or not there is such a thing as an internal Raynaud's disease we do not know.

Dr. Nicholson questions the diagnosis in the third case. Possibly that is partly my fault. When I was talking to the grandmother of this child the other day, she informed me that case, No. 3, had been brought to the Children's Hospital of Philadelphia two or three months previous to being admitted to the Philadelphia Hospital to be treated for blueness and swelling of both hands and feet. On each occasion, the interne told the mother that they would keep the case under observation, giving at the time a dose of oil.

THREE YEARS' EXPERIENCE WITH THICK CEREAL FEEDINGS IN INFANCY IN MALNUTRITION AND ALLIED CONDITIONS*

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In August, 1919, I reported in the Archives of Pediatrics 12 cases of malnutrition in infancy fed by means of a thick cereal formula. In August, 1920, a second report added 10 more cases to this series. Up to the present writing I have had over a hundred various cases in private practice fed on thick cereal, and have observed many more at the New York Nursery and Child's Hospital. Since 1919 this method has been used extensively, and with varying results, most of them favorable, not only in New York City, but in other parts of the country. To such an extent has it been used that it is now regarded as a valuable addition to our armamentarium for difficult feeding cases and allied conditions. It must, however, be regarded as an additional method to be used in selected cases, and *not* as a panacea for all our feeding troubles.

Historical: The author claims no especial originality in introducing this method. He has, however, revived and possibly popularized an old one. It is really a reversion to one of the early methods of infant feeding prevalent during the Eizabethan period, and during the centuries preceding it. In those days breast feeding was practically the only way of nourishing an infant or a young child. Cow's milk was seldom used, as it was regarded as poisonous; and very rightly too, as sanitation and the care of fresh milk was at that time at a very low ebb. As a general rule the artificial foods were limited to beer soup, water pap (bread and baked flour soaked in water) and pulse, which was a combination of peas, beans and lentils. In these last two mixtures, pap and pulse, we have combinations quite similar to those employed in the thick cereal, and the vegetable soup mixtures of the present day.

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Preparation of the Cereal Feeding: My stock formula is made up as follows: One per cent skimmed milk is used as the liquid basis of the mixture. It has been my experience, and this has been noted by many others, that babies with any degree of malnutrition, whether long continued or temporary, will not tolerate or assimilate fat well. To confirm this in my series, a number of stool examinations were done on cases fed on fairly high fat, before they were put on thick cereal. Fat indigestion was noted in almost every case. Other factors which influence me in using skimmed milk are its comparatively high sugar, proteid and salts content, in comparison to whole milk, and its actual food value of 12 to 13 calories per ounce. If the cereal is cooked in water these needed calories, salts, sugar and proteid are lost.

The cereal used by preference is farina. This is advocated on account of its colloidal (glutinous) qualities and its extreme tenaciousness. Although farina is less soluble and has less protected colloids than rice, I use it on account of this tenaciousness and because of the fact that to get the same resulting thick mixture almost twice as much rice flour is needed. The proportion of the mixture is as follows: One level tablespoon of farina is used to 5 or 6 ounces of skimmed milk. In very young infants or prematures, the skimmed milk may be diluted with water half and half. We have had a number of such cases at the Nursery and Child's Hospital. Our statistics show, however, less gain on partially thick mixtures than there is on the thick feeding. Cane sugar and dextrimaltose are then added, using at first 2 level tablespoonfuls of dextrimaltose and 1 level tablespoonful of cane sugar to 30 ounces of the mixture. All this is cooked together for 30 to 60 minutes, using either a single or a double boiler until the resulting mixture is so thick and tenacious that it *will just barely fall off an inverted spoon.* Thorough cooking is an absolute requisite. If cooking is not thorough, owing to the encouragement of a saccharolytic flora the baby may get up a diarrhea and accordingly will not gain.

Chemistry of the Polycarbohydrates: As a rule there is not the increase in the number of stools which one would expect to find from the higher sugar and starch content of the mixture. The reverse, or a tendency to constipation is usually the rule. This is probably due to these factors: Starch in solution acts as a protective colloid and in this way prevents the formation of hard indigestible casein curds. This colloidal action is due to the soluble starch itself and not to the salts or the cellulose in suspension. In addition it has long been a recognized fact that a combination of several carbohydrates in the same food can be given without taxing the power of the organism to utilize sugar, whereas when a single carbohydrate is used this may not be the case. The farina mixture being a "polycarbohydrate" mixture of milk sugar, malt sugar, cane sugar, dexterin and starch, comes under this category. The malt sugar is absorbed first, then the cane sugar and milk sugar, next the dexterins and finally the starch. The absorption is slow and continues for a long time, and the organism is enabled to utilize its sugar without being upset by a sudden overdose. Accordingly the infant gains and there is no tendency towards diarrhea which might result from feeding it with a large amount of a single carbohydrate. It is obvious therefore, that the probable reason that infants can take carbohydrate in the form of starch (farina) when they cannot take it in the form of dexterins and sugars, is that the molecular structure of starch is more complicated than that of the dexterins and the sugars. The more complicated the structure of a carbohydrate is, the more numerous are the steps in its breaking down to its end products. There is therefore, less fermentable material in the intestines at one time, and less opportunity is afforded for fermentation to get the upper hand.

Examination of the Stools: This was done in 4 of my cases to determine the carbohydrate utilization of the infant during the thick cereal feedings. The method used was as follows (Method used by Miss Hilda Croll, New York Postgraduate Hospital, Dr. Chapin's Service): The combined stools for the period are extracted by a thorough mixing of cold water, and by bringing the mixture to the boiling point in a flask. A small portion of this water extract is saturated with dry picric acid, and 3 c.c. portions are heated with 1 c.c. of 22 per cent sodium carbonate in a test tube, in a boiling water bath for 20 minutes. After dilution, the red-brown color produced by the reduction of sodium picrate to sodium picrinate is compared in a colorimeter with a standard glucose solution similarly treated. The soluble reducing sugar is thus determined in terms of glucose. Nonreducing soluble sugar is determined by heating 3 c.c. of the extract with picric acid alone for 10 minutes, and then heating with sodium bicarbonate. The picric acid inverts any cane sugar to reducing sugar. The original mixture of the stools with water is boiled with approximately .06 per cent normal hydrochloric acid for 2 hours, cooled and neutralized, and a portion of the filtrate is saturated with dry picric acid; one to three c.c. are heated with sodium carbonate as for soluble reducing sugar. The total carbonate of the stool is changed to reducing sugar by this acid hydrolysis and is expressed as glucose. The percentage utilization of carbohydrate in these 4 cases fed on farina, skimmed milk, dextrimaltose and cane sugar was: 97.8, 98, 99.4 and 98.6 per cent respectively. These percentages follow very closely Chapin's 2 cases, which utilized 99.3 and 97.6 per cent. As compared with the findings of Pease and Rose (*Am. Jour. Dis. Chil.*, xiv, 1917) there was very little difference. They found utilizations in normal children, fed on mixed diets, of 97.2 to 99.5 per cent of the carbohydrates. It seems plain then, that the thick cereal babies utilized their carbohydrates as well as the carbohydrates in an ordinary mixed diet were utilized by a normal healthy baby.

Examination of the Urine: Repeated urinary examinations have been done on these infants, and there has been no indication of glycosuria following the high intake of carbohydrate.

Administration of the Thick Cereal: The activity of the amylolytic and diastatic ferments in the digestive tract of the newborn infant has long been recognized. From birth onward there is a rapid increase in an infant's capacity to digest starch, until by the eighth or ninth month of life this capacity is fully developed. Because of this fact, starch has not been added to the infant's dietary until the fourth or the fifth month, and then in the form of barley water or a similar diluent. It is my contention, however, that infants even as young as a week tolerate starch, and tolerate it well. This view is borne out by both Graves and Chapin in different series reported by them.

When first put on a thick feeding there is usually some difficulty in getting the baby to take the spoon feeding. To overcome this difficulty the cane sugar being much sweeter than the dextrimaltose should be increased for the time being, and the baby will then generally take it. Incidentally there may be gagging, and in some cases vomiting, until the infant is accustomed to such a radical change in its diet. The method of administration is simple. I use either the handle of a small spoon, or a small wooden tongue blade. The cereal is placed on the back of the infant's tongue, thus facilitating swallowing. At first this may prove tedious for the nurse, and it may take her from one-half to one hour to feed the baby. Gradually, however, the baby takes it with avidity. If a thinner mixture is to be given, a nipple with large holes may be used, either with a bottle or alone, using a tongue blade to force it through the nipple. The amount to be given of course varies. I generally start in with 70 to 80 calories per pound of body weight, divided into the requisite number of feedings for the child's age. (Incidentally each ounce of the mixture contains about 24 calories per ounce.) Either 3- or 4-hour intervals may be employed, and in accordance with the calories, from 2 to 4 ounces are given at a time. One may find that a larger allowance may be demanded and tolerated to maintain a satisfactory gain. I have run the calories as high as 100 per pound with no bad effects, but of course for no great length of time. When the child is well accustomed to the mixture and has started to gain, from 1 to 3 ounces of a green vegetable puree is added directly to the cereal. This may be used as early as the third month. String beans, spinach, carrots, celery and young turnips are the vegetables of choice. These supply not only a few extra calories, but also salts, and the antineuritic or water soluble B vitamin. The combination of these factors acts as an added incentive to increased growth, and to nutritional improvement and turgor. It is important to give orange or prune juice to these infants from the very inception of the thick cereal feedings, to counteract any possible tendency to scurvy, and incidentally to aid in bowel elimination. In this connection I have found dextrimaltose No. 3 of aid in counteracting constipation where it occurs.

In regard to the length of time that one can keep a child on thick cereal there is no fixed rule. In one of my cases it was continued for 8 months with good success. Naturally other articles of diet were added from time to time, the vegetables in particular being emphasized. In most of the cases it seemed best to make a change back to a milk formula within a month's time, dry milk being used in the majority of cases as a bridge between the cereal and whole milk, the rationale of its use being its low fat and high sugar content. Naturally this change must be done slowly and carefully, the thick cereal being continued twice a day as the child's regular cereal. When the infant is weaned from the thick feeding one will usually find that he has *gotten into the habit of gaining*, and the change back to milk seldom affects him badly.

Water Administration: To supply the water deficiency of this diet in these babies there should be given boiled water in amounts up to 4 ounces three or four times a day. In vomiting babies, this may be given with or without a stomach tube, and then preferably at night, as they seem to retain it better then. However, in a number of my cases, and Graves has had the same experience, no water whatsoever was given even during the hot part of the summer. These babies did not seem to get particularly thirsty, there was no edema or evidence of water retention, and normal urine was passed in normal quantities.

Indications for Its Use: I have used this feeding in the following types of cases: 1, Malnutrition (marasmus); 2, pylorospasm (mild and severe); 3, pyloric stenosis; 4, breast fed colic cases (as an A. C. feeding); 5, persistent vomiting (neuropathic); 6, idiosyncrasy for breast milk, and for cow's milk; 7, liquid food intolerance; 8, acute gastritis with vomiting; 9, eczema and allied skin conditions; 10, acute ileocolitis with vomiting; 11, prematurity with defective assimilation; 12, acute infectious fevers.

CASE REPORTS

On account of the shortness of time allotted to this paper I will cite only two illustrative cases, both of which demonstrate the practical application of thick cereal feeding.

Case 1. Age 4½ months, male, born February 24th. Birth weight 7 lbs., 12 ozs. Second child, one miscarriage, full-term normal baby. Labor normal. Family history negative. Was nursed 10 days. This was stopped because the nurse told the mother that her milk was bad. At this time the baby's weight was 7 lbs., 10 ozs. First formula: milk 6½ ounces, barley water 13 ounces, lime water 1½ ounces, milk sugar 3 teaspoonfuls. The baby was kept on this for 2 days, the breast being supplemented with 2 ounces of this formula 7 times a day. On March 12th (16 days old) he vomited after every feeding and had frequent green stools. He was taken off the breast entirely and a weaker formula was given of milk 7 ounces, barley water 17 ounces, lime water 1½ ounces, milk sugar 1½ ounces. Of this, 3½ ounces were given every 3 hours. The vomiting, which was nonprojectile in character, still continued, however, and on March 24th a change of doctors was made. At this time the weight was 7 lbs., 8 ozs., or a loss of 4 ounces since birth. A new formula of 1½ ounces off the top of 3 bottles of Walker-Gordon milk, water 11 ounces, lime water 4½ ounces, was ordered; 2½ ounces were given every 3 hours, 8 feedings. This was increased on March 29th to the upper 2 ounces of 3 bottles. There was no change in the formula until May 16th, and during this period the baby was not weighed, bathed or touched by the doctor's advice. As the vomiting still persisted and the parents were getting very worried, another doctor was called in on May 17th. The weight was found to be 9 lbs., 4 ozs. Barley water for one day was ordered, and then milk 16 ounces, boiled water 15 ounces, and lime water 1 ounce. Four ounces at 8 feedings were given. One week later 8 tablespoonfuls of Mellin's food were added. From May 24th to July 8th the formula was gradually increased, until when seen by me, the baby was on milk 18 ounces, water 17 ounces, Imperial Granum 3 teaspoonfuls, lime water 1 ounce, dextrimaltose No. 3, 3 teaspoonfuls. During this period the child had continued to spit up and had failed to gain normally. Various forms of sugar had all been tried with no success. The weight on July 6th was 10 lbs., 4 ozs.

When seen on July 8th physical examination was negative with the exception of craniotabes and a rather marked degree of emaciation for a 5½-months-old infant. There were no masses in the abdomen, no peristaltic wave, and absolutely no evidences of either pylorospasm or pyloric stenosis. My tentative diagnoses were either cow's milk idiosyncrasy, or gastric indigestion from high fat feedings.

Accordingly a formula was ordered of 25 ounces of 1 per cent milk, 8 ounces of water, 3 level tablespoonfuls of dextrimaltose No. 3. This was boiled 3 minutes and 5½ ounces were given 6 times a day every 4 hours. This formula did not relieve the vomiting but the baby did gain to 11 lbs., 3 ozs. on July 20th, or 15 ounces in 12 days. At this time 2 drops of a 1 to 1000 solution of atropin were added to each bottle. This tended to improve the vomiting temporarily but there was no gain. Finally on July 31st, the baby was put on the following formulæ:

1 per cent milk	17 ounces
Water	3 ounces
Dextrimaltose No. 3	1½ tablespoonfuls
Atropin (1-1000 sol.)	12 minims

6½ ounces at 6 a. m., 10 a. m. and 10 p. m.

1 per cent milk	15 ounces
Farina	2½ tablespoonfuls
Granulated sugar	2 tablespoonfuls

This was boiled 30 minutes, divided into 2 feedings, and fed with a spoon at 2 p. m. and 6 p. m.

The weight on July 31st was 11 lbs., 2 ozs. As there was still a small amount of vomiting after the atropin-skimmed-milk feedings, on August 2d there were given 5 feedings of the thick cereal in the above proportion of 1 to 6. The vomiting absolutely stopped and the baby started to gain with a rush. The weights for the weeks following were:

July	31	11 lbs.,	2 ozs.
August	1	11 "	8 "
"	2	11 "	12 "
"	4	11 "	14 "
"	7	12 "	1 "
"	12	12 "	6 "
"	17	12 "	14 "
"	24	13 "	3 "
"	31	13 "	14 "
September	7	14 "	4 "
"	21	15 "	6 "

In 8 weeks' time this baby gained 68 ounces, an average of 8½ ounces a week, there was no distention or edema, and he became bright and normal in every way. No water was given him during that period. He was gradually changed over to a semi-solid diet and at the age of one year weighed 24 pounds.

Case 2. Age 10 weeks, male, born March 6th, second child, full term, normal baby, birth weight 7 lbs., 8 ozs. Family history negative. Was nursed 4 weeks and then weaned. A formula of dryco, dextrimaltose and water was ordered. This was gradually increased until when seen by me at 10 weeks he was being fed dryco 4 tablespoonfuls, boiled water 4 ounces, dextrimaltose 2 teaspoonfuls. He was given 7 feedings every 3 hours and had been getting enough calories per pound, the estimated calories being over 65.

Examination revealed a physically normal child, but marantic in appearance, weighing 8 lbs., 12 ozs. There had never been any evidences of indigestion and the failure to gain was the chief source of worry to the parents.

This child was put on a thick cereal feeding of skimmed milk 26 ounces, farina 4 level tablespoonfuls, and granulated sugar 2 level tablespoonfuls. This was boiled 30 minutes, and 3 tablespoonfuls were given at 6, 10, 2, 6 and 10. This was gradually increased to 2 per cent milk 27 ounces, farina 5 tablespoonfuls, 2 tablespoonfuls of granulated sugar, 1½ tablespoonfuls of dextrimaltose; and later 1 tablespoonful of spinach or string beans. An immediate change for the better followed. The weights for the 10 weeks following were:

May	22	8 lbs.,	12 ozs.
"	29	9 "	9 "
June	5	10 "	1 "
"	12	10 "	7 "
"	19	10 "	12 "
"	26 (spinach added)	11 "	3½ "
July	3	11 "	12 "
"	10	12 "	4 "
"	17	12 "	12 "
"	24	13 "	5 "
"	31	13 "	14 "

In 10 weeks this child gained 82 ounces, or an average of 8¼ ounces a week. In appearance he changed from a sallow, undernourished, marantic child, to a fat, rosy, happy one.

Naturally all cases do not respond to treatment as these two cases did. We get some comparative failures and the feeding is *not* infallible. It is interesting to see how this method affects the after life of the child. The children I have had on it seem, if anything, to be healthier and sturdier than the strictly milk-fed ones, and seem to resist disease somewhat better. This is undoubtedly due to the mixed diet at an early age. This, however, is empiric reasoning.

A word in regard to two other high calory methods of feeding—the Czerny-Kleinschmidt and the Karo Syrup whole lactic acid feedings: We have used both of these methods successfully in hospitals and private practice, but it is my personal impression that they have a more limited use than thick cereal, and also that they cannot be continued for as long a time without bad effect.

From my experience the following conclusions may be drawn:

1. A method of feeding certain difficult feeding cases is here reported.

2. Its use at present comprises a range of 12 different types of cases.

3. This method of feeding has been proved to be a valuable adjunct to our knowledge of infant feeding.

161 East 64th Street.

DISCUSSION

Dr. A. Graeme Mitchell (Philadelphia, Pa.): I have been much interested in hearing this paper on one phase of the important subject of infant feeding. Most of us have used the farina mixture for the treatment of pylorospasm and pyloric stenosis, but it has remained for Dr. Mixsell to emphasize the very distinct place for this food in a number of other conditions.

Dr. Mixsell suggested to me that I compare this food with the butter-flour mixture of Czerney and Kleinschmidt. In order to do this I have calculated the strength of the ingredients in the farina mixture as recommended in the paper and find that there is about 1% of fat, 14.5% of carbohydrate and a little over 4% of protein. Each ounce of the mixture would have a caloric value of about 27. In the mixture of butter-flour which we have used at the Children's Hospital in Philadelphia the percentage strength of fat has been about 4.5%, of carbohydrate about 8, of the protein about 1.5, and the caloric value about 24.5 to the ounce. At first glance then it would seem that these two foods are quite different, and yet further analysis will show that in both of them cognizance is taken of the same principles.

In the first place it has been recognized that fat is often the ingredient of cow's milk which is difficult of digestion. In the farina mixture this has been obviated by giving a low fat, in the butter-flour mixture by giving a fat so modified that the irritating fatty acids are to a large extent removed, thus allowing the administration of a larger percentage of fat. The lessening of the fatty acid percentage in the butter-flour mixture is accomplished by using boiled butter.

In the second place a variety of carbohydrates are given in each mixture, 5 in the farina mixture (lactose, starch, dextrin, maltose, sucrose) and 3 in the butter-flour mixture (lactose, starch, sucrose). The advantages of a polycarbohydrate mixture have been very well brought out by Dr. Mixsell. Besides the non-fermentable quality of starch and the fact that it spreads the process of digestion over a greater length of intestine, there are other advantages. Thus, caloric value is raised considerably and a marked protective action is exerted for the digestion of fat. Just what this protective action is, has never been satisfactorily explained, but it is a pronounced clinical fact. It can often be demonstrated that an infant who is having difficulty in digesting a certain percentage of fat, can digest that same amount of fat when starch is added to mixture. Carbohydrates such as sugar and starches can, to a certain extent and for a certain length of time, practically take the place of fat in the economy, provided that enough fat is present to supply the fat soluble vitamin. Experiments performed by Osborne and Mendel (Joun. Biol. Chem., 1912, xii, 81) show that growth continues on fat-free diets. Just how long one should continue to supply a food in which corbohydrate takes the place of starch to a considerable extent is a question. My own feeling is that when there is normal digestion fat should be given in reasonable amounts and that when there is fat indigestion the aim should be to attempt to establish a tolerance for fat by gradually increasing the amount present in the food.

In the third place (to continue the comparison of the two foods) it is noticed that in both the butter-flour and the farina mixtures there is cooking of the food. While cooking is done for the purpose of rendering the starch more digestible it also accomplishes the same thing for the protein in that it prevents the formation of large tough curds. The farina mixture has a much larger percentage of protein than the butter-flour mixture, which to my mind is an advantage in favor of the farina mixture. The caloric value of the two foods is about the same.

I am trying very hard not to enter into a discussion of infant feeding in general, but I cannot resist the opportunity to say that the ideal artificial food for the well infant recognizes several criteria. Briefly stated, these are (1) digestibility; (2) sufficient fluid content; (3) the presence of vitamins; (4) sufficient caloric value for the age, weight, and activity; (5) a moderate amount of fat which will supply sufficient for the fat needs but not be enough to cause indigestion, thus allowing for the difference in the chemistry of cow's milk and human milk; (6) carbohydrate as sugar up to 6%, with the addition of starch for its additional caloric value and its protective action on the digestion of fat; (7) protein which is present in moderate amount and in excess of the percentage present in breast milk, thus allowing for the relative paucity of the essential amino acids present in cow's milk as compared to breast milk; (8) the proper amounts of salts.

In the abnormal infant, digestibility becomes the prime object, and the amounts of fat, carbohydrate, protein and salts and their quality must be altered, and caloric value temporarily assumes a secondary place.

If one will study a case in question with the above principles in mind he will usually be able to find the proper food for the individual, sick or well. That, after all, is the secret of success. As Dr. Mixsell says, the farina mixture is not a panacea. This applies to all food mixtures—they must be given to the properly selected case.

I should like to say one more word about the use of starch in the infant's dietary. Its advantages have already been pointed out. It contributes very largely to the success of the farina mixture. I believe that starch should always be given in such form as barley water or other cereal diluent to artificially fed infants by the third month of life, and that by the sixth month a cereal, such as cream of wheat or farina, may be given by spoon feeding. It would seem that the only contraindication to the use of starch in the food is the presence of undigested starch in the stool. This can always be easily determined by the simple expedient of dropping iodin on the stool, a blue discoloration indicating the presence of unconverted starch. Some pediatricians do not hesitate to continue to give starch even though it is recovered unchanged in the stool. I should like to ask Dr. Mixsell whether many of his cases showed undigested starch and whether he considers this a contraindication to the farina mixture. In this connection it is well to remember that it is possible to obtain good results with mixtures containing lesser amounts of farina.

In Dr. Mixsell's case reports it is seen how the farina mixture may be given in various ways. Thus, 1 or 2 feedings a day may be given in place of the ordinary milk mixture which is employed at the other feedings, or the strength of the milk used may be varied so that different percentages of fat and protein are obtainable, or, as has been stated, the amount of starch may be varied.

I should like to say that it has been a privilege to discuss this paper, and I think that the Society is to be congratulated on persuading Dr. Mixsell to come over here and address us.

Dr. Edward L. Bauer (Philadelphia, Pa.): Dr. Mixsell has given us a lucid outline of his work and we are grateful to him for it.

I have tried the thick farina cereal feedings and have met with success, largely due to the teaching of Dr. Mixsell and also to the teaching of Dr. Sauer.

I have only one or two minor practical points to which I wish to call your attention. One is the possibility of cooking the farina for a longer period of time. I have found that if it is cooked from two to four hours children can take larger quantities and still give the same evidence of complete digestibility. The making of this formula can be done by the woman with an average mind, despite the fact that in most homes the women do not seem to know how to cook any more. Another point is I have found it rather easy to fill up a sterile nipple with cotton, letting the baby suck the farina off the tip of the nipple. He can do this without much effort and with no choking.

Dr. Percival Nicholson (Ardmore, Pa.): For two years and a half, shortly after Dr. Sauer's paper, I have been using this cereal feeding. I think cooking much longer in making the preparation is very important. In several cases in which thick cereal feeding was being carried out the children continued to vomit, and on going myself into the diet kitchen I was able to stop that vomiting by careful supervision of the preparation of the formula. We are boiling the milk and the water with the farina and the sugar for about fifteen minutes over a gas flame. We then add water to make an ounce or two more than the quantity we started with, and allow the whole mixture to cook one hour in a double boiler. It is very important, if possible, so to gauge the quantity of water you add before you cook the mixture in the double boiler that the finished product will have the right volume; otherwise it does not mix homogeneously.

Our experience with this thick cereal feeding has been most successful, not only in pylorospasm but in malnutrition in general. I think it is very easy to start with a 1% milk, and to increase the percentage of fat in your mixture without necessarily changing over to some other formula; and you can gradually lower the percentage of carbohydrates without making any radical changes. The results in apparently real pyloric stenosis cases, which the x-rays showed to be markedly involved, were very remarkable, and I have gotten so now that in all cases of suspected pylorospasm or stenosis I routinely put them on thick cereal feeding, and if they do not respond I consider an operation.

There is one thing I should like to ask Dr. Mixsell, and that is whether he has encountered very much temperature in feeding his thick cereal cases on these high cereal feedings? I have not had such an experience except in dehydrated children who needed water.

It has been very interesting to me to hear the paper, because I think this is one of the most interesting types of feeding, covering a multitude of problems which are very hard to meet by other types of feeding.

Dr. Clifford G. Grulee (Chicago, Ill.): I do not know just how to start discussion on this paper. The ideas as expressed, of course, are somewhat different from those I have. In the first place, I am rather abandoning the idea of looking into the question of digestion and I think more from a metabolic standpoint. It has been pretty well shown by investigation in the last fifteen or twenty years that the digestion of fat is quite well taken care of in the gastro-intestinal tract of the infant. This was not so well recognized with starch, but in the last few years these young infants have been shown to take care of starch from a digestive standpoint very well. The question of whether or not a certain method of feeding should be adopted depends upon several different things. In the first place, it depends upon its simplicity. It is true that we should not abandon any method of treatment that is complicated simply because it is complicated; but it seems to me if any method of treatment is to be widely employed, and employed to the greatest good of the greatest number, it is much better that it should be a simple method than that it should be a complicated one. The method of administration, too, is of a very great deal of value in this respect. In other words, if you can get the same results with simpler methods, your usefulness is much greater.

This matter of thick cereal feeding, of course, has been with us for a very long while. Dr. Sauer, I think, took it up after Helmholz and others had used it. My impression is that even among its most ardent advocates there is a tendency to use it less and less, except for pylorospasm where the thick cereal feeding is used very largely, and where I think it is right that it should be used largely, my statements yesterday to the contrary notwithstanding, because in the home it would be exceedingly difficult to carry out the type of treatment of pylorospasm which I mentioned, and certainly certain cases of pylorospasm react very well to thick cereal feeding.

Whether or not this thick cereal feeding which Dr. Mixsell has brought out is of value, depends a great deal upon the mastery which a man has of the method. We have simply thought that we could set forth a method and some man could take it up and use it and it would be all right. That is not possible. In my opinion it is absolutely necessary, if a man is going to have ultimate success, for him to have a complete mastery of the methods that he uses. In Dr. Mixsell's hands thick cereal feeding might be of a great deal of value, perhaps more than any other type. I doubt very much if I could get the same results that I could with albumin milk. I do not mean this in the way of criticism at all; I simply mean that I am familiar with the use of albumin milk, and I think that, to a large extent, explains the difference of opinion regarding success and failure in infant feeding.

Dr. Robert K. Rewalt (Williamsport, Pa.): I have listened with a great deal of interest to Dr. Mixsell's paper. I have been very much interested in this subject of thick cereal feeding for infants during the past year and have used it in sixteen cases. I have varied somewhat in the preparation of this food from the method Dr. Mixsell uses, in that I found that with the skim milk the babies did not gain so well, and by using so much smaller proportions of whole milk they seemed to do a great deal better. Of course, I realize that in a small series of cases such as I have had, one is somewhat handicapped in drawing very many conclusions. I have also boiled the farina with water a longer period of time in a double boiler, from one to two hours, and then have added the milk, but only cooked the milk in the solution ten minutes. I should like to ask Dr. Mixsell whether there is any set order of preparation for this food?

Dr. Mixsell (in closing): I have very little to add. I am very glad to get the opinion of the men who discussed the paper. Dr. Mitchell only attempted to explain the difference between the farina and the butter-flour mixtures, so I shall not go into his discussion at all.

To Dr. Bauer I would say, I have advocated boiling the mixture only thirty to sixty minutes because I think the child digests it as readily as he would if cooked longer. I do not see any possible objection to boiling the farina two or three hours if you wish, possibly to break down the starch a bit more thoroughly, and then adding your milk afterwards and boiling it for thirty minutes. However, I do not think it is necessary and in some cases it is rather a tedious thing to do.

To answer Dr. Rewalt: we always start with skim milk and then gradually increase to whole milk mixtures as was mentioned by one of the other men. That can be done slowly until finally whole milk is given, and as Dr. Rewalt has said, a smaller quantity can be given if one uses whole milk. The proportion, however, is important. I think it is fairly fool proof. You can, if necessary, show the mother or the nurse how it should be made, devoting half an hour or an hour to its preparation, and it is rather a simple thing to put your ingredients in your double or single boiler and boil it up. That is about all there is to it.

In answer to Dr. Nicholson: I have never had any cases of a rise in temperature. Even during the heat of the summer, with very little water given, I have not seen any rises.

Dr. Grulee is perfectly correct when he says that one cannot regard this as a method to be used by everybody and in every kind of a case. I personally feel that you or anybody else can use it as well as I. As a matter of fact, I do not suppose I put a child on thick cereal more than once a month or even less. I always attempt to use a whole milk mixture and feed them normally. This method is a thing to be used when you see the child slipping away from you, and it really does work in a great number of cases. A great many of the men are using it in New York, and they all agree that it is a good thing to fall back upon when you are in a quandary.

SOME PRINCIPLES INVOLVED IN THE BRONCHOSCOPIC REMOVAL OF FOREIGN BODIES

WITH ILLUSTRATIVE CASES*

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In presenting this paper, the writer wishes to inform you that he has nothing new to offer. There are, however, several interesting cases that have come to his attention during the last few years, which he wishes to report and to place on record. The main object is to call your attention to the results that may be obtained by the ordinary physician who has been instructed in the use of the scopes and then applies this knowledge as the various cases present themselves.

Before a Society or Section such as this, it is not necessary to argue for the many advantages of these scopes. The pioneers in this branch of science, such as Doctors Jackson, Ellen Patterson and others, have emphasized many times their wide application in bronchial and esophageal work. In spite of this, there are many physicians who have never seen these scopes used and others who do not appreciate the ease of application in many of their cases. I believe that until such time as the great majority of physicians are informed, we cannot too often advocate their use.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

In order to emphasize this point more forcibly, let us consider the histories of a few of the cases. A patient with a nickel in the esophagus was advised "to wait five days." This child was unable to swallow food and could drink water only with the greatest difficulty. Another child was treated for 33 days as a case of fever and cough. When this child came into the office a very clear-cut history was obtained that pointed to the onset of the trouble resulting from a peanut kernel in the bronchus. Sometime later another case came to my attention in which an external esophagostomy was done for the removal of a nickel.

We know of a grown-up who for the last four months has had a half dollar just below the pharyngeus, and moreover, will not have it removed. These are a few of the striking examples that only too frequently happen.

Occasionally the patient is subjected to drastic measures by the general practitioner. This is illustrated by a child three years old, who had a tin whistle in the upper part of the esophagus. Three separate attempts were made in two days under a general ether anesthetic, without success. On the third day, without an anesthetic, the foreign body was removed by bronchoscopic methods with very little trouble.

Many other histories might be recited. I only wish to emphasize that this condition is not a local one, but applies to many sections of this country, as any one who investigates will learn. It behooves us, the members of this section, in our contact with the general practitioner, to advise and suggest in these or in any other doubtful cases, the early and more frequent use of the scopes. This is my earnest plea.

Let us consider the essential requirements for successful work along this line. An accurate knowledge of the anatomy of the parts must be the foundation. An individual with natural mechanical aptitude has the advantage, for it is essential to have perfect coördination between the hands and the eyes and a ready and familiar manipulation of the instruments. Judgment must be exercised in the selection of the forceps and instruments required for each individual case. Last but not least, perfect team work is necessary.

In our foreign body work, we carefully follow the teachings of our leader. Up to the present time, we have given no anesthetic either local or general.

Inasmuch as we learn more through failures than successes, I wish to report at this time one case. As it is not a very pleasant subject, I will make it as brief as possible. Dr. Hollister and I journeyed to a neighboring city to remove a carpet tack from the left bronchus. The patient, a boy six years old, had had this tack in the bronchus five weeks. We had a large audience of about twenty physicians and several nurses. Anticipating the necessity of sponges, one of the nurses was instructed in the use of a sponge holder. Upon introducing a 5 mm. tube considerable secretion was encountered and, at this time, it was found that one of the sponge holders had become broken. A second sponge holder was used and upon its removal no sponge was found. After several minutes, the sponge was finally removed from the bronchus by forceps. I asked for another sponge. You can imagine my chagrin when I was told that the second sponge holder had also been broken. Unwilling to grasp the tack without seeing the point, I desisted.

Up to this time, no reports have been made in the literature as to the examination of broken backs or necks by the scope method. Being curious as to whether any damage might be done to the esophagus, trachea, or bronchus, I availed myself of every opportunity presented. So far, we have scoped three cases, two necks and one back. The results were disappointing, as we were unable to discern any damage done to any of these organs.

CASE REPORTS

(1) Specific stricture of esophagus lower third, unable to swallow fluids, dilated treatment improved, able to take fluids and solids. One and one-half years later died of pneumonia.

(2) American Federation Labor button. Esophagus, B. W., girl three years old, 24 hours, pin open, removed.

(3) M. M., girl 18 months, collar button, esophagus, four days.

(4) Stella R., 2½ years, girl. Nickel, esophagus, six days.

(5) Baby C. Three months old, girl. Needle, post-pharyngeal space.

(6) Margaret Y. Girl 13 years. Quarter in esophagus, two years, had to wash all foods with water.

(7) O. P. Male, three years, whistle, esophagus, three days.

(8) E. P., Girl 19 months, peanut kernel, right bronchus, 33 days.

(9) M. W. Girl 4½ years. Two one-cent pieces, esophagus, five days.

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DISCUSSION

Dr. Ellen J. Patterson (Pittsburgh, Pa.): Dr. Bishop is to be congratulated upon the presentation of a timely paper and the successful outcome of the cases reported.

It is urgent that the general practitioner be informed of the recent developments that have enormously increased the value of the endoscopic method of removal of foreign bodies; also, as to endoscopic diagnosis and treatment of diseases. This I think is slowly coming to pass, judging by the numbers of doubtful cases being referred for diagnosis.

The essayist speaks of the mechanical problems. In this connection I find difficulty in convincing the laity and the general medical men of the necessity for obtaining a radiogram and physical examination just previous to endoscopy. They fail to appreciate the fact that for speedy and safe removal of foreign bodies one needs careful study of the case for localization. It is essential to know the shape, size and character of the foreign body to be removed; its location, its relation to the bronchial tree and the part presenting. This is especially necessary with sharp foreign bodies. I have often been asked to do a bronchoscopy on the basis of a ray film made a week or more before I had seen the case. If possible a radiographic examination for verification should be made within a few hours of the bronchoscopy, lest the foreign body may have shifted its position. Sometimes the foreign body proves to be other than the patient thinks he aspirated.

The essayist does not say that he repeated bronchoscopy on his tack case, but we congratulate him on his patience and self-control in desisting and repeating the effort later with safety for the child's life. One is always tempted to prolong a bronchoscopy in a difficult case.

I think it would be wise if the general practitioner, instead of advising the patient to forget about it, would refer all cases to the radiographer and let him take the responsibility of saying whether or not the foreign body is present.

I appreciate Dr. Bishop's remarks about team work because I find it absolutely impossible to do endoscopy without trained assistants with whom one is working constantly.

Dr. Harris Peyton Mosher (Boston, Mass.): I thank Dr. Bishop for including me in his remarks during the paper. I am surprised at the slowness with which this work is making its way with the general practitioner. They are still very slow in accepting these methods. I think one important point is the use of the proper forceps. Don't attempt to get a foreign body out unless you have the right kind of forceps. A second point is suction. Suction is a life saver, not only in the work in the esophagus but in connection with the work in the trachea. The largest amount of money so far reported as lodged in the esophagus was 25c; but my assistant had a case of a little boy in whom he found two quarters side by side.

SELECTIONS

PERSONALITY STUDY OF A "WITCH DOCTOR," NOW A CONVICT*

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In December of 1920, the New York papers narrated the incident of an old woman in Pennsylvania who was obliged to appeal to the local authorities for protection from her neighbors, by reason of the charge that she was a witch and was casting such spells over their horses, cows and pigs, that they died. Commenting on this report, a New York neurologist (Casamajor, Louis: Neurol. Bullet., April, 1921, Vol. III, No. 4, p. 128) said: "The mind in Pennsylvania in 1920 can be very little different than that in Salem 250 years ago." That we are at present in an era when belief in witchcraft is intensified is a fact, and that sections of our state are infested with those dominated with such beliefs is also true, but though the situation is troublesome in certain localities, it will probably not become a widespread menace. However, from all countries are coming reports of increased interest and increasing numbers interested in spiritism, occultism and allied beliefs. This may in a measure be due to the reappearance in cycles of such beliefs for reasons we cannot understand, but certainly its presence at this period is to some extent occasioned by the sudden bereavement and longing forced upon so many families through the loss of loved ones during the World War.

That those well poised mentally may with safety investigate this realm of the unknown—assuming that a few such delve into these matters—is probably true, but from time to time one learns of some unstable individual who in this way has become insane. In the past, many crimes were perpetrated upon persons believed to possess evil powers, and occasionally a spiritualist of the extreme type has been found guilty of some criminal act, so that the subject is for us one of much concern.

The horrors of the Salem witchcraft craze and the tortures inflicted upon innocent persons is recalled by the fact that in a short time, 19 persons were hanged and many others were subjected to less severe punishments, and it is hoped that a certain wag had only this branch of the Puritans in mind when he said: "How much better it would have been if the rock had landed on the Pilgrims instead of the Pilgrims landing on the rock!"

On the other hand the extreme fanaticism to which those who believe in witchcraft may go, is shown by the craze in Havana, Cuba, in 1905, when 14 persons were indicted upon the charge of witchcraft, several of whom were convicted, and of those implicated two were put to death. At that time a certain witch doctor demanded the warm heart's blood from a white child in order that the illness of a colored woman might be cured, it being alleged that said illness had resulted from injury inflicted by the whites upon her race during the days of slavery. The white child was slain and a poultice made from its heart's blood was applied to the woman's abdomen, while a decoction made from the heart itself was taken internally (Witchcraft in the Salem Village in 1692: Nevins, Winfield S., 5th ed., p. xliii, 1916. The Salem Press Company, Salem, Mass.).

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*Read before the Philadelphia Psychiatric Society, March 9, 1923.

THE WITCH DOCTOR

This study is of a man who believes himself possessed of supernatural powers, the activities of which in his leisure moments were employed chiefly to heal the sick, and whose efforts were accepted as miraculous by some members of the community where for years he peacefully pursued his art. But eventually, in a state of exereme eroticism, probably induced by the too intimate contact with certain young girls whose presence he claimed was necessary for the working of a charm, his self-control was lost, with the consequence that he was convicted of statutory rape and sentenced to from 5 to 7 years in the Eastern State Penitentiary.

The prisoner is now 61 years of age. He is married, has 5 children, and by trade is a bricklayer. As to his ancestry nothing of interest is known save for the statement that he believes his father "heard voices" and "saw visions." His negative reply to the question as to whether any of his family had been in jail was a lie, since one son had served time in the Huntingdon Reformatory, in Chambersburg jail for burglary, in Franklin County jail for larceny, and 2½ years in the Eastern Penitentiary for larceny and for receiving stolen goods.

In mental make-up the man belongs to what is known as the mystic type—he is distinctly superstitious, believes in tokens, portents, miracles, spooks and in other spectral phenomena. He is crude, suspicious, sly and rather clever at spinning yarns. As to his personal habits, he chews enormous quantities of tobacco, and upon occasions in the past used alcohol to excess, but previously nothing definitely wrong had been noted in his moral sphere. He is a spiritualist, does automatic or so-called spirit writing and receives messages through the activities of the ouija board. But in addition to these supernatural attributes he is a "healer." He believes himself to be the only one of this kind in the country and among his followers the art is familiarly known as "spell-breaking" and "off-casting." The method, he states, can only be revealed to a man by a woman or to a woman by a man and says it is based on the Scriptures—the sixth and seventh Books of Moses—which matter was kept out of the Bible, but that such a volume may be procured at a few book shops. He claims to have successfully employed his supernatural powers in the curing of headache, rheumatism, erysipelas, dropsy, fits and insanity. And in addition to restoring the human subject, he has been successful in treating horses, cows and other livestock.

While there had always been a psychic trend to his mental make-up, it was not until the following circumstancs that he was brought to a full knowledge of his powers. When 37 years of age, being an expert bricklayer, he was sent to Toronto to do some difficult work on an oven, and while there had an attack of rheumatism which necessitated his remaining in bed for several weeks. From that illness he found no relief until there was brought to him an old woman, 70 years of age, who administered a faith-cure that consisted of three treatments and after which he recovered promptly. His restorer said he had been sent to her so that she could reveal to him her method of healing. And so one dark night, the first Friday of the new moon, between 12 and 1 o'clock, she took him to a crossroads and there on the ground drew a magic circle about six feet in diameter, in which he was directed to sit. She then sat on his lap, placed her right hand on the top of his head and uttered a few strange words. In relating the incident to me he said: "Man! I thought the world had come to an end! I heard and saw such terrible things—it thundered, the lightning flashed and I saw dragons, elephants, and devils with horns rushing at me through the air." Immediately following this was a period during which he saw only angels and other pleasant sights. The complete hallucinatory episode lasted about three-quarters of an hour, when a state of perfect calm superseded. Since that time he claims to have had unusual powers, and one of these is supernatural healing.

He has the utmost confidence in his "gift" and his face lights with enthusiasm as he describes his many cures. In a burst of confidence he secretly showed me a volume entitled the Book of the Maccabees, stating it had been extracted from the original Bible, and pointing to a certain verse read: "Then, Tobias, taking of the gall of the fish, anointed his father's eyes." It appeared that the father who was blind, in this way had his sight fully restored. Then, hastening to add that he had by the same procedure cured a girl who was as blind as a bat, he expressed the hope that I would employ the method in my practice. The man appears earnest, is pursuasive and rather convincing in his arguments, and these attributes, when blended with some native trickery, have been known to make a strong impression upon those about him who have been denied a liberal education. Through such traits he has obtained a following among some of the prisoners, instances of which I shall cite.

A cellmate who had been in the prison hospital for several days with a swollen and painful jaw but without relief, asked to be returned to his cell. The magician then got in touch with him, made a few strokings over his jaw, repeated some strange words, when almost immediate relief was experienced. Another cellmate who had a headache following a blow on the head, was relieved in the same way. Still another prisoner, whose sweetheart had not visited him at the promised time, quarreled with the witch doctor, claiming that he had cast a spell over his girl, thus preventing her from visiting him, and to avert a fight, it was necessary to remove the cellmate to another cell.

He endeavors secretly to keep suspended about his neck, a so-called charm that is made in a most remarkable way, later to be described. This magic device it is claimed will keep away all diseases and all evil influences.

A few years ago he heard people say they were much terrified by seeing a man without a head on the road between Gettysburg and Waynesboro, and so late one night he repaired to the spot in the hope that he might encounter the object. Surely enough, the apparition appeared, then suddenly vanished into the ground and this phenomenon was repeated several times. One night shortly after at about midnight, he returned to the spot and dug down for a distance of about two and a half feet, when he struck something hard that made a sound like the ringing of a bell. The noise caused some dogs to bark so loudly that they aroused the neighborhood and then he hastily filled the hole and fled. He states that after his release from prison he will return to the spot and dig up that object.

A clergyman living near him had a very pretty wife who was afflicted with some mysterious illness that had baffled the doctors, and so this healer was sent for. The next day being Sunday he warned the clergyman against going to his church as there would be present a woman with black hair who would create so much disturbance that he could not continue to preach. The advice was not heeded by the clergyman, and surely enough there sat a black-haired woman whose presence had such a disconcerting effect upon him that he could scarcely finish his sermon. For a long time the clergyman's wife had suffered from a swollen and painful abdomen from which she could obtain no relief. To overcome this the conjurer placed his hand upon her abdomen, said a few strange words and shortly after the swelling subsided and the pain ceased. He then made further investigation, and finding a lump over her right abdomen, stated to the clergyman that underneath the skin at the swollen point there was a small bunch of black hair, which he could remove, and that then his wife would be perfectly well. After obtaining the clergyman's consent, he removed the bunch of hair, burned it, and the wound healed shortly after. It is believed in the realm of witchcraft that fire promptly and effectually destroys witches. This adept of magic then further explained if the hair had been carelessly thrown upon the ground, the wound could not have healed until the hair had slowly rotted away. The black-haired woman who had been at the church was a former sweetheart of the clergyman's, whom he had jilted shortly before marrying his present wife. But the rejected one had her revenge by casting a spell over the wife, which was accomplished by the cutting off of a lock of her own hair, making it into the form of a bullet, then shooting this into a photograph of the wife, and it was at a corresponding spot in her abdomen wherefrom the bunch of hair was later removed by the witch doctor.

THE CRIME

As the outcome of many minor successes, the magician found his circle of activity enlarging, until finally he was called upon to perform tasks that taxed his uncanny powers to their utmost. Animals as well as people were being relieved of their ills by means of strokings and uttering of strange words, by circumscribing them with lines, but particularly through the wearing of charms. A seal was made by drawing upon paper certain characters fashioned after descriptions found in the writings of Moses, not included in the Bible, and known as the sixth and seventh books. Such a seal when placed in a muslin bag constituted a charm, and it was absolutely essential that the bag to hold the charm be made from "muslin that had never been washed and sewed with thread that had never been knotted." These charms were particularly efficacious in driving out of sick persons the evil spirits that had obtained possession of their bodies, and in the case of human beings they were worn suspended from the neck, while for the lower animals they were placed about the pens and stables. One particularly refractive witch had, it was believed, been operating on the farm for a period of thirty years, and at that time had diffused her witchship throughout the corporal being of a certain hog. For the destruction of this evil spirit the witch doctor proposed that said hog be burned, but to this the owner would not accede. Finally, after people, door knobs and the pigpen had been bedecked with charms, the witch was forced to evacuate the premises and the sick hog recovered.

In the neighborhood of this exorciser there lived a well-to-do family whom from time to time he had served as witch dispeller. But eventually the activities of the witches became so great that single-handed he was unable to cope successfully with them, and so it was explained there was needed the assistance of two innocent young girls. Adjoining the farm of the well-to-do family there was another farm owned by them and tenanted by a distantly related family of reduced circumstances. In this family were two daughters aged 12 and 15 whose presence was desired to aid in the spell breaking. After some doubts and misgivings on the part of the mother, that were met by the assurance that the girls would be as safe in his hands as in the hands of God, they were loaned to play their part in this masterpiece of witch annihilation. And so it was arranged that these sisters should come for the night to the house of the well-to-do family in order that they might touch the hem of the magician's garment and thus strengthen him sufficiently for the task in hand. At the subsequent trial, it was sworn to by these sisters that they had been disrobed and led to the bedroom of the witch doctor, and during the night they were silenced by the threat that if they ever revealed to anyone what was taking place, the consequences to them would be terrible. Early next morning, the three emerged from the bedroom and, accompanied by members of the family, all marched in enforced silence to a near-by woods. Armed with a knife, and a brace and bit, the magician led the way to a certain tree into which he bored two holes. From the head of each girl he cut a lock of hair and after much solemn praying and incantation, these bunches of hair were stuck into the tree and the holes plugged. From the heads of members of the family hair was also taken and treated in a like manner, and this completed the master ceremony for expulsion of the witches. The girls, being superstitious, were fearful of the dire consequences that might befall them if they told of the ordeal through which they had passed, and so maintained silence until two years later, when the elder sister married. Then it was that she revealed to her husband the whole circumstance and he, becoming infuriated, lodged the information with the prosecuting attorney which led to a most sensational trial and conviction.

What is one to conclude from the many claims made that messages are received through mediums, and of apparitions that it is said are seen? Assuming that some of these mediums are honest, are their experiences but tricks played on them by their special senses, that is hallucinations, are they disembodied personalities, or are they the spirit manifestations of those dead? I am not a believer in voices from the dead nor in the existence of spirits about us, though I frankly admit there are many things I do not know and possibly these are some of them. But in this era, students of psychic phenomena are going very far in their statements and extremists in this field of inquiry do not care to have unbelievers present at their seances, which is unfortunate—not that we always doubt their honesty, but we do doubt the correctness of their interpretations. My interest is not in spirits, but in the mental make-up of spiritualists; and famous men, some of them our greatest scientists, are firm believers in the existence of such activities about us. Among these may be mentioned Flammarion, the renowned French astronomer; Professor Richet, now holding the chair of Physiology in the Academy of Medicine in Paris; Sir Oliver Lodge; Sir Arthur Conan Doyle; Sir William Crooks, famous for his tubes in x-ray work; Professor Baron von Schrenck Notzing, the distinguished Munich neurologist; and the great Italian criminologist, Lombroso, now dead. Recently many apparitions have been reported as seen, photographed, felt by the human hand, and it is claimed that in the breath of one the presence of carbon dioxide was chemically demonstrated.

It is difficult to understand the attitude of these great scientists, but sometimes laymen have clear vision, so that Dr. Samuel Johnson in his classic "Rasselas," perhaps showed true insight when he said: "Disorders of the intellect happen much more often than superficial observers will easily believe. Perhaps, if we speak with rigorous exactness, no human mind is in its right state. There is no man whose imagination does not sometimes predominate over his reason, who can regulate his attention wholly by his will, and whose ideas will come and go at his command. No man will be found in whose mind airy notions do not sometimes tyrannize, and force him to hope or fear beyond the limit of sober probability. All power of fancy over reason is a degree of insanity; but while this power is such as we can control and repress, it is not visible to others, nor considered any deprivation of the mental faculties; it is not pronounced madness but when it becomes ungovernable, and apparently influences speech or action."

Occasionally one now reads of parties equipped with photographic outfits and other devices, that have set out to study phenomena in localities where it is said ghosts are seen in the open, or they may investigate other alleged supernatural phenomena in some haunted house.

These matters have become quite the rage and one wonders what next may be reported.

The arguments against spirit messages have been forcefully stated recently by Mr. James Douglas, editor of the *London Sunday Express,* who in substance says: Through all ages the motives for believing in spirits have remained the same—the desire to survive after death, the fear of the unknown and the agony of bereavement. The aboriginal savages believed universally in spirits thousands of years ago, which may be a good reason for our disbelief in them. The spirits say but little and their modest contributions have never been of help in solving great problems. There is the element of chance and possibly the phenomenon of telepathy entering into the question, but the findings of these spirit world students appear largely to result from self-suggestion and self-deception.

It is well known that a few normal persons have frequent and extensive hallucinatory experiences. Cases showing what are called hypnagogic hallucinations have been reported by me (Hypnagogic Hallucinations with Cases Showing These Sane Manifestations: Trans. Amer. Neurol. Assoc., 1918, p. 125). These experiences, usually optical in nature, are observed during the transitional stage from wakening and slumber, in which persons and objects of various kinds, or even panoramic scenes, pass rapidly before the sight. In some individuals such hallucinations are observed with the eyes closed while in others they are seen with them open. These experiences are best explained upon the ground of mental projections, and usually they are so accepted by such individuals.

CONCLUSION

What was the mental status of the witch doctor? At the time of his crime was there sufficient evidence, if known, to justify detention in a hospital for mental diseases; or was his act that of a sane man in a state of spiritualistic fanaticism, who, while in the dangerous environment of his own creation, yielded to temptation, and so rendered himself liable for his crime? The prisoner told me his case was a "frame-up," a claim not infrequently made in prison, especially by sex offenders, but the case was appealed and the verdict was sustained. The act appears to have been that of a degenerate—that is, it was perpetrated by one who had degenerated in the moral sphere, while his intellectual faculties had for the greater part remained intact.

The whereabouts of the witches is unknown, but the witch doctor is still in prison, and the well-to-do family were compelled by the courts to pay more than $15,000 to those whom they had helped injure.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

X-RAY DIAGNOSIS OF PEPTIC ULCER

DR. G. W. GRIER

While the clinical symptoms of peptic ulcer are much the same regardless of what part of the stomach is involved, the x-ray signs are quite different, and for that reason we will consider ulcer in different parts of the stomach and the first portion of the duodenum separately.

Ulcer of Cardia: If the ulcer is situated at the cardiac orifice, the changes will all be in the esophagus. Benign ulcer at the cardiac opening is, of course, very rare and probably cannot be differentiated from malignancy in that location by x-ray examination. The changes consist of a dilatation of the esophagus of greater or less degree, with obstruction at the cardiac opening; as the patient swallows, the meal collects in the esophagus and passes spasmodically through the orifice into the stomach. If the lesion extends into the esophagus, the lower end of that organ will be irregular in outline, as in malignancy, in contradistinction to cardiospasm, where the lower end of the esophagus is smooth. If the ulcer is situated in the cardiac end of the stomach proper, there will be no alteration in the size of the stomach, since there is no obstruction at the pylorus, nor any alteration in position. There will be an alteration in contour corresponding to the location of the ulcer. The crater of the ulcer can usually be seen as a small bulging area, the so-called Houdek's niche. Most of the perforating ulcers we have seen have been on the lesser curvature near the cardia. In this instance there is a small accessory pouch just outside the stomach, and this is connected with the cavity of the stomach by a small canal, giving a very characteristic appearance. Another deformity caused by ulcer about the junction of the cardia with the body of the stomach, is the so-called hour-glass contraction of the stomach, due to extensive cicatrization as the ulcer heals. The name describes the deformity perfectly, there being an upper and lower pouch to the stomach, these connected by a narrow canal. Another deformity occasionally seen in a small mucous ulceration at the cardia without induration or cicatrization is a contraction of the circular muscular fibres at the seat of ulceration, causing a deep indentation opposite the ulcer. This is called an "incisura." It is differentiated from a peristaltic wave by the fact that it remains stationary and identical in one place, whereas a peristaltic wave changes in shape and depth and moves onward toward the pylorus.

Ulcers of the body of the stomach usually occur in one or two forms—the penetrating type, or the chronic indurative type, where the crater of the ulcer is not deep and there is a great deal of induration and cicatrization of the stomach wall over quite a large area, giving a straight rigid appearance to the involved portion. In both these types there is always a partial obstruction of the pylorus, due to spasm, and this results in a dilatation of the stomach, the enlargement being a broadening instead of an elongation as in atony. Due to this change in size and the hypertonicity which accompanies this condition, the position of the stomach is usually high and more horizontal than is commonly seen and the pyloric end is further to the right.

There is usually a hyperperistalsis in ulcer of the body of the stomach and the peristaltic waves skip the deformed area on the stomach wall, corresponding to the site of the ulcer. There is always a delayed emptying in ulcer in this location, due to the accompanying pylorospasm, and a residue will be found in the stomach six hours after a liquid meal of milk, malted milk or buttermilk and Barium.

Ulcer of the Pyloric End: The same remarks as to size and position apply here as to ulcer in the body of the stomach, with the addition that adhesions to the pyloric end may pull that part of the stomach to the right or up under the liver. The deformity in ulcer near the pylorus is not so characteristic and often has an irregular, indented or notched appearance in place of the small pouch representing the crater of the ulcer. In this region there is also usually a spasm of the musculature near the ulcer, which adds to the deformity, and it may be impossible to relax this spasm even with belladonna. There is usually a hyperperistalsis and a delayed emptying of the stomach with marked pylorospasm.

Ulcer in First Portion of Duodenum: This practically always results in an irregularity in the contour of the duodenum, due partly to cicatrization and partly to spasm. As this part of the duodenum is normally very symmetrical, with smooth, rounded borders, any irregularity in contour is easily detected. In addition, the emptying time of the stomach is usually much delayed, in almost all cases there being a sizable 6-hour residue in the stomach.

Differential X-ray Diagnosis: The most important differentiation is between gastric ulcer and gastric cancer. From the x-ray appearance of the deformity, cancer of the stomach may be divided into three types:

1. Medullary, where a large tumor projects into the lumen of the stomach. This appearance is entirely different from ulcer, and is not mistaken for it.

2. Indurative, where a large section of the gastric wall is infiltrated with cancer without any large projecting tumor masses and possibly with ulceration of the mucosa. The appearance here is identical with the chronic indurative type of ulcer already described and probably cannot be differentiated from it by x-ray examination alone.

3. Annular carcinoma of pylorus. Here the growth surrounds the pylorus and grows into the pyloric antrum, the effect being to narrow and lengthen the pyloric canal. There is, of course, a marked obstruction, just as there is in ulcer in this location. If the obstruction is not so violent as to prevent it, one can see the long tortuous pyloric canal, which is characteristic of annular carcinoma. If the obstruction is very violent, the pyloric canal will not be seen and this condition may be impossible to differentiate from obstructive ulcer, pyloric or duodenal.

Ulcer of the pyloric end of the stomach may be simulated by a reflex spasm of the musculature producing a similar deformity. The spasm is usually secondary to chronic appendicitis or gall-bladder disease. It usually disappears if belladonna is administered to full physiological effect. In reflex spasm the six-hour residue is generally not so large, or there may be no retention, and it is not common to get the dilatation of the stomach one sees in ulcer. The positive signs of gall-bladder disease or appendicitis should be looked for, of course. Adhesions to the duodenum or pyloric antrum from gall-bladder disease produce a deformity in contour often mistaken for ulcer and which is extremely hard to differentiate.

THE PATHOLOGY AND PATHOGENESIS OF PEPTIC ULCER

DR. W. W. MACHLACHLAN

The etiology of gastric or duodenal ulcer is obscure, but there are probably many causes. In trying to diagnosis these conditions, there is at present a tendency to underestimate the symptoms and perhaps to place too much reliance upon the laboratory tests alone. Ulcers may be single or multiple, acute or chronic, the most common site in the stomach being near the pylorus, and in the duodenum about 3 cm. from the pylorus.

The acute ulcers are usually punched out, funnel-shaped, with clean base, and may be of any depth. They are usually quite free from inflammatory cells and in their course may go on to perforation and even cause fatal hemorrhage if a large vessel has been eroded.

The chronic ulcers are of various sizes and shapes; chronic inflammatory cells are present, with more or less fibrosis. There are perigastric adhesions to the near-by organs. Exposed and eroded vessels result in chronic bleeding with sometimes acute exacerbation. When healing takes place, there are such deformities as an hour-glass stomach, stenosis at either the cardia or pylorus, and possibly obstruction to the flow of bile because of associated stenosis of the common bile duct.

The pathogenesis of these ulcers is more or less speculative. There may be a local injury to the cells, resulting in malnutrition and digestion of the part by the gastric juice. It is thought by some that the presence of hydrochloric acid is essential in the production of an ulcer. Chemicals and direct blows have resulted in ulcers. Then there are trophic changes such as following burns, stasis and ateritis of the capillaries, and finally the ulcers of tuberculosis or syphilis.

Diagnosis is made from the symptoms, signs, and laboratory data. There are no pathognomonic symptoms, but there are some that are suggestive. Pain is apt to appear two or three hours after ingestion of food. It is relieved by the taking of more food or alkalies. Pain may be present for weeks, months, or even years. Vomiting is sometimes present; it often relieves the pain, and sometimes the vomitus contains blood. Fifty per cent of the cases show a high total and free acidity, forty per cent show practically a normal amount of acid, while ten per cent show relatively low acidity.

A retention meal consisting of lettuce and raisins is sometimes helpful, as retention sometimes points to an associated spasm of the pylorus. Stools should be carefully examined for the presence of occult blood.

In the physical examination, patient is apt to be quite anemic, and there may be local epigastric tenderness. Of the laboratory data, the x-ray is by all odds the most helpful.

SURGICAL TREATMENT OF PEPTIC ULCER

DR. E. W. MEREDITH

As conditions are now, certain ulcers of the stomach and duodenum require surgical treatment.

Perforated Ulcer: Ulcers perforating into the free peritoneal cavity demand an emergency operation. In the subacute and chronic types radical measures may for a time be postponed. Later surgical relief is frequently sought on account of continuous pain and distress, gastric retention, vomiting and loss of weight through limitation of diet.

In free perforations, closure of the perforation is usually sufficient. Whether a gastro-enterostomy shall be done at this time depends on condition of patient and the condition of tissues about the site of perforation. It seems fair to assume that no patient's life was ever saved by this additional operation. In some cases the condition of the patient will be so excellent, the closure of the ulcer so difficult and inadequate, the local condition of the tissues so indicative of chronicity, induration and obstruction that no hesitancy will occur as to the proper procedure. In case of doubt, however, gastro-enterostomy should not be done.

Bleeding Ulcers: Operation is seldom indicated in bleeding originating in the upper abdominal gastro-intestinal tract. The difficulty of ascertaining the exact origin or cause of the hemorrhage (stomach, liver or spleen), the alarming condition of the patient, the tendency of the hemorrhage to cease spontaneously and the technical difficulties of controlling it once the abdomen is open, makes the "let alone" policy much the safer in most cases. Where repeated hemorrhages occur, however, the source of which is an ulcer, operation should be considered. Acute ulcers are more apt to bleed than chronic ones, and medical treatment may result in complete cure. The bleeding in chronic ulcers due to erosion of a large vessel is often fatal, the induration of tissues preventing spontaneous control. In such cases operation would seem to be indicated. The decision is a hard one to make, however, and temptation to delay great, as the chances of a successful operative outcome are small.

Chronic Callous Ulcer: A certain number of acute ulcers will develop into chronic ulcers—some through neglect, self-medication, inadequate treatment, and dietetic errors; others despite the most careful treatment and attention. This type of ulcer is particularly amenable to surgical treatment and the results are satisfactory in 80% of cases. It is true that some patients are not rendered symptom free; however, the improvement in these cases is so marked that they consider themselves cured. There are, and probably always will be some failures. Faulty diagnosis, uncorrected disease elsewhere in the body and technical errors will account for most of them.

Marginal ulcers at site of anastomosis occur in 1% to 2% of cases. Some of those ulcers are believed to be due to an "ulcer tendency" in the patient, meaning, probably, that the fundamental factors are still active.

The crux of the whole matter is the proper selection of patients. If the patient needs operative relief badly enough, the result is almost certain to be good. In determining this need, emptying time of the stomach will be the most important guide. This interference with the function of the stomach may occur irrespective of location of ulcer. Patients who fail to get relief from medical treatment are likely to be benefited by operation. Patients who promptly relapse, once active bed treatment is discontinued also should be given the benefit of surgical treatment.

As to the type of operation which may be required in a given patient, no exact rules can be laid down. Most patients that need an operation will require a gastro-enterostomy, as obstructive retention is a fundamental indication. Destruction or removal of the ulcer by knife or cautery is always desirable if conditions permit.

MEDICAL TREATMENT OF PEPTIC ULCER

DR. J. A. LICHTY

The medical treatment is largely symptomatic. The symptoms which determine the treatment are largely (1) the hunger pains which are so graphically described by nearly all of the patients (some patients will speak of it as an empty feeling, of a burning in the epigastrium, or of a gnawing sensation); (2) the symptoms which come with disturbed motility, eructation of gas, regurgitation of food, nausea, sometimes vomiting, a heaviness in the epigastrium.

The course of medical treatment should be determined by the degree of acuteness of the symptoms. Obstinate nausea and vomiting, especially with the presence of blood in the vomitus, or with blood in the stool, or a positive string test, indicate the necessity of most rigid care. The patient must rest in bed, preferably in a hospital, and have a trained nurse. Food should be withheld from the mouth and glucose feeding by the rectum done. The glucose solution should consist of 56 grams to the litre of normal salt solution and containing about 45 minims of deodorized tincture of opium. One and one-half litre may be given by the Murphy drip method in twenty-four hours. If the stomach is retentive, bismuth subcarbonate, or sodium bicarbonate or magnesium oxid or tincture of belladonna may be given in doses depending upon the degree of the acidity, the amount of pain and other conditions. At the end of five or seven days, if the symptoms have subsided, and if the string test should be negative to blood, food is also given by the mouth, beginning usually in the following order and amounts: Every two hours two ounces of either white of egg water, barley water, cream and vichy water or milk and lime water. These amounts are increased and the grades changed as conditions will permit, in about the following way: four ounces, six ounces, eight ounces. The intervals between the feedings are made three hours and rectal feedings continued. This may be after an interval of ten days or two weeks. The alkalies may be given midway between the feedings. To the food above specified is added, gruels, junket, custards, ice cream, raw eggs, soft boiled eggs, milk toast, cereals, toast and butter, mashed green vegetables, boiled potatoes. any whole vegetable, not sour, and finally, most any dietetic dish which can be made from milk, cream, butter, eggs, flour, and sugar; also stewed and raw fruits, not sour, are now allowed. The diet is brought up to the full caloric requirements and the patient is kept upon this for months, reporting at intervals for changes in diet. The stay in the hospital is from three to four weeks.

This is the treatment of an acute typical case. At any period in the course, the treatment may be modified. Rectal feeding may not be tolerated, which is not a great misfortune. The resting of the stomach goes on the same or food may be given by mouth sooner, or at once. The string may reveal a blood stain after five to seven days of treatment. The same treatment is continued for five days longer when, if the stain is still obtained, duodenal feeding through an Einhorn tube is instituted for ten to twenty days. Milk, cream, eggs, and sugar to the value of 2,500 calories per day may easily be introduced. Sometimes in the course of such a treatment conditions and complications are revealed which show that further medical treatment is useless. Surgical intervention is then instituted.

Common sense methods which will meet the indications, such as reducing the acidity, avoiding food stasis and food traumatism and furinishing sufficient calories, are all that are needed.

Certain complications which occur during the course of medical treatment should be mentioned. They will be very few if proper care is instituted. Constipation should be overcome with the diet or such alkaline laxative as magnesium oxid. Pain, if not relieved by the treatment already suggested, may be met by the administration of orthoform, or codein or morphin.

Treatment conducted on the lines suggested is most satisfactory, providing the coöperation of the patient can be obtained.

The medical treatment of peptic ulcer is established for the purpose of overcoming these symptoms and in the hope that the patient may be relieved or that the ulcer may heal. It is also concerned in establishing such a régime of living, including hygiene and dietetic regulation, as may tend to prevention of a recurrence of the ulcer.

Healthful living, removal of foci of infection, avoidance of acute systemic infections, all tend towards increasing of body resistance in this, as well as in other pathological processes.

This constitutes the general treatment of peptic ulcer which must be instituted in any treatment, be it medical or surgical.

REMOVAL OF VESICAL FOREIGN BODIES; TWO NEW METHODS

DR. C. H. AUFHAMMER

Many operative cystoscopic instruments have been manufactured. Most of them are of little value. Oftentimes one is confronted unexpectedly with the need of some simple aid at a moment when no operative instruments are available. For such cases we have evolved two methods which have upon occasions been of considerable help.

One occasionally finds in the bladder a rather large-sized stone which has been passed from the ureter, producing considerable bladder disturbance, and which, because of its size, cannot be voided. Upon cystoscopic examination it is found to be too large to be washed out through the ordinary cystoscope and perhaps not large enough to require crushing. Such a stone may readily be removed if one will place the distal lens of the cystoscope directly over the stone, make sufficient pressure to hold it between the lens and the base of the bladder, withdraw the telescopic and catheterizing element about one-half inch, continue to press downward upon the stone, and then slide forward the telescope. The stone is caught in the opening of the cystoscope and held in place by the end of the telescopic obturator. Sufficient pressure is made on the eye-piece and the sheath to hold the stone firmly enough to permit its withdrawal through the urethra with the cystoscope. There is some urethral abrasion, of course, but the prompt relief of the stone's removal more than compensates for the slight trauma.

For other foreign bodies, such as rubber catheters in the bladder, etc., one may easily make a snare out of about fourteen inches of an old number 6-F uretral catheter, passing through it a doubled, fine snare wire, such as is used in nose and throat work, three or four inches longer than the catheter. This shortened catheter, with its wire loop extending to the end of the catheter, is passed through the catheterizing channel of the cystoscope in the usual manner and held in proximity to the foreign body. Both ends of the wire loop are pushed forward until the flattened loop *itself* extends about one inch beyond the catheter. One of the proximal ends of this wire is then pulled upon in order to produce an irregular shape to the loop, and this loop is placed over the end of the foreign body. Both wire ends are then pulled upon, tightening the loop over the foreign body and holding it to the catheter end. The cystoscope, catheter, wire and foreign body are all withdrawn together.

Frederick B. Utley, M.D., Secretary.

COMMUNICATIONS

To the Readers of The Atlantic Medical Journal,
Harrisburg, Pa.

AN APPEAL FOR INFORMATION ON MATERNAL WELFARE

The Committee on Maternal Welfare of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons is anxious to procure accurate information as to the progress which each state is making in the matter of maternal welfare in order to formulate a report for our annual meeting in Philadelphia, in September.

A preliminary programme was published in the issue of the *American Journal of Obstetrics and Gynecology* for June, 1923, which it is hoped may be a suggestion of an outline for national work among all organizations which have a common basic line of endeavor including Medical Societies, Departments of Health, and Commissions of Social Workers.

We shall be under many obligations if you will be kind enough to send at your early convenience a brief synopsis of the results accomplished in your state and, most important, if possible a contrast of the record of the clinics or regions where patients have been privileged to have prenatal care with the statistics of the community in general where no supervision has been afforded the prospective mothers.

These it is planned to have incorporated into the completed survey to be presented to the Association and to be published in the Annual Transactions later on.

Dr. Henry Schwarz,
St. Louis;
Dr. George W. Kosmak,
New York City;
Dr. George Clark Mosher,
Chairman, Kansas City.

Etna, Pa., July 14, 1923.

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: The knowledge that the proposed change in the Compensation Act has failed is not encouraging. However, since we must submit to its many objectionable features for at least two years more, it certainly behooves the medical profession of this state to plan our attack at once, for a change in the law. Next time we must not fail. Too much credit cannot be given the Legislative Committee of the State Society for their untiring efforts in behalf of our interests. It is humiliating to know that the insurance interests were too strong for us and that their success will continue to fatten their pocketbooks during the next two years.

I believe we should lose no time in forming committees on compensation laws in our county societies, as suggested by Dr. Moses Behrend. The splendid activities of the Philadelphia County Society should serve as a shining example to us all and stimulate us to leave no stone unturned when the next legislature convenes.

As a start I have a suggestion to offer. Perhaps, since it involves the expense of a little time, it will not appeal to many. During the past year, I have sent my bill to the employer with a letter in which I have briefly brought to his attention the fact that I have rendered professional services to one of his employees and payment for same has been refused by the insurance carrier. I have also mentioned that a few carriers still feel a moral obligation to pay an honest debt and have done so, despite the fact that they might have sought refuge behind the notorious Mackay decision. The result of such a course has been payment of my bill by the employer and not by the carrier in a number of cases. I am convinced that the average employer is unaware of the injustices done to the surgeon by the present compensation law. I feel that by writing such a letter our side of this problem will be brought forcibly to the attention of those who can help us—the employers. Personal conversation with several of the latter has convinced me that such is the case. The business man is unaccustomed to getting things done for nothing. He expects to pay for his employees' injuries. Furthermore, I believe he is under the impression that he is paying his doctor bills. If every surgeon, who treats a compensation case in a hospital and fails to collect for his services, would take the trouble to notify the employer of the facts and repeat the procedure in every case, would not the sympathy of the employer be with us in a short time? Yours truly,

M. A. Slocum.

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: We present herewith the names of the committees and their chairmen elected by the Allegheny County Medical Society to serve for the 1923 Session:

Transportation Committee—Dr. John A. Hawkins, Chairman.

Editorial and Publicity Committee—Dr. Edward B. Heckel, Chairman.

Hotel Committee, for the reservation of rooms, rates, etc.—Dr. I. H. Alexander, Chairman.

Entertainment Committee for Tuesday evening—Dr. H. G. Schleiter, Chairman.

Clinics—Dr. E. E. Mayer, Chairman.

Exhibits—Scientific and Pathological—Dr. Samuel R. Haythorn, Chairman.

Ladies' Committee—Mrs. Chas. Aufhammer, Chairman.

Thursday Evening Entertainment — Dr. James D. Heard, Chairman.

Members desiring hotel reservations should either write direct to the hotel stating that they are making reservation for the Session, or to Dr. I. H. Alexander, Chairman of the Hotel Committee, who will assign reservations. Reservations should be made early in order to secure desirable rooms.

Very truly yours,
Harold A. Miller, Chairman,
Committee on Arrangements.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Committee on Scientific Work

Essayists taking part in the annual session are requested to make careful note of the following:

1. Papers read before the Society become the property of the Society. (See chapter xi, Section 2, of the By-Laws of the Society.)

2. Papers and illustrations, if any, must be handed to the Secretary of the Section immediately after reading. No exceptions will be made to this rule.

3. Carbon copies are not acceptable; please turn in only originals.

4. Double space all papers and leave plenty of margin, especially on first page.

5. Lantern demonstrations must be arranged for by September 15th; otherwise lanterns will not be obtainable.

T. G. Simonton, *Chairman.*

RESOLUTIONS

ADOPTED BY THE MEDICAL BOARD OF THE PHILADELPHIA GENERAL HOSPITAL, AT A MEETING HELD ON JULY 12TH, RELATIVE TO THE DEATH OF DR. C. LINCOLN FURBUSH, DIRECTOR OF THE DEPARTMENT OF PUBLIC HEALTH, PHILADELPHIA, WHICH OCCURRED ON TUESDAY, JUNE 26, 1923.

The Medical Staff of the Philadelphia General Hospital desire to place upon record their sincere regret at the recent death of the Director of Public Health, Dr. C. Lincoln Furbush.

His position as Director made him responsible for the solution of many difficult problems. The sanitation of a large city, increasing in area and population, whose expenditures are limited; the successful administration of public institutions, having large staffs and dealing with a complex population; the best interests of the medical profession in furthering medical education and maintaining medical standards, and the stimulation and encouragement of public officials honorably to discharge duty to the public—these were among his many problems.

He brought to their solution ample experience, obtained in other countries, and under conditions of peace and war. To these he added a thorough knowledge of the matters in hand. The most valuable of all was his conception of a public duty and office as a public trust, and his faithful and conscientious fulfillment of this obligation.

In this last he was unsparing to himself. Health and even life itself were secondary in his valuation in comparison with duty performed and good results accomplished. He was prodigal in the expenditure of strength for others, and his life has ended before the span of its natural term was accomplished.

To this hospital he added much of great and permanent value. His intelligent and kindly sympathy with the desire of the staff for improvement; his generous support of all that was for the good of the institution, and the example of his personal loyalty, are appreciated more than ever since his loss.

The history of this hospital is rich in interest in the achievement of medical science, and contains many examples of personal attainment and devotion. But there can be no more valued addition to its history, and no more significant and appealing example than the life and character of him whom we have recently lost.

Committee:
Edward P. Davis, M.D., Chairman;
J. T. Rugh, M.D.,
John H. Musser, M.D.,
T. H. Weisenburg.

NEW AND NONOFFICIAL REMEDIES

Hayfever Timothy Pollen Extract—Mulford.—The liquid is obtained by extracting the proteins from the pollen of timothy. For a discussion of actions, uses and dosage, see the article on Pollen and Epidermal Extracts Preparations and Biologically Reactive Food Proteins, *New and Nonofficial Remedies,* 1922, p. 232. This preparation is marketed in packages containing fifteen consecutive doses for a complete treatment and also in packages containing partial treatments only. H. K. Mulford Co., Philadelphia.

Purified Diphtheria Antitoxin (Antidiphtheric Globulin).—Concentrated diphtheria antitoxin (*New and Nonofficial Remedies,* 1922, p. 280) is marketed in syringe containers of 1,000 units and in syringe containers of, respectively, 3,000, 5,000, 10,000 and 20,000 units. E. R. Squibb & Sons, New York.

Normal Horse Serum.—This product (*New and Nonofficial Remedies,* 1922, p. 278) is also marketed in packages of one 10 Cc. syringe. E. R. Squibb & Sons, New York. (*Jour. A. M. A.,* Oct. 21, 1922, p. 1427.)

Aluminum Compounds.—Several aluminum compounds are official, including the ordinary alum. The acetate and acetotartrate of aluminum are used in the form of solutions described in the National Formulary. Aluminum compounds are used for their astringent action. They are not so astringent as the lead salts, but they may exert an irritant and even caustic action when used in the form of concentrated solutions or as "burnt" alum. Aluminum compounds are slightly antiseptic. Proprietary preparations of aluminum in combination with organic acids have been introduced with a view of utilizing the astringent and antiseptic properties of their components.

Alumnol.—The aluminum salt of betanaphthol-disulphonic acid. Alumnol is used as a mild antiseptic and, in concentrated solutions, as an irritant or caustic. It is used for the destruction of the gonococcus in gonorrhea. H. A. Metz Laboratories, Inc., New York.

Novocain Base. — Para-amino-benzoxydiethylamino-ethane. The base contained in procain. The action and uses of novocain base are the same as those of procain (*New and Nonofficial Remedies*, 1922, p. 36), but it is soluble in fixed oils. H. A. Metz Laboratories, Inc., New York.

Novocain Nitrate.—A brand of procaine nitrate—N. N. R. (*New and Nonofficial Remedies*, 1922, p. 37.) It has the actions and uses of procaine, but is compatible with silver salts. H. A. Metz Laboratories, Inc., New York.

Diphtheria Toxin-Antitoxin Mixture (0.1L+).—A diphtheria toxin-antitoxin mixture (*New and Nonofficial Remedies*, 1922, p. 282) containing 0.1 lethal dose of diphtheria toxin neutralized with the required amount of diphtheria antitoxin. Marketed in packages of three vials, each containing 1 Cc.; also in packages of thirty vials, each containing 1 Cc. Lederle Antitoxin Laboratories, New York.

Acne Vaccine.—Acne bacillus vaccine (*New and Nonofficial Remedies*, 1922, p. 298) is marketed in packages of four syringes containing respectively, 50, 100, 250 and 500 million killed bacilli; in packages of four ampules containing respectively, 50, 100, 250 and 500 million killed bacilli (with a syringe); in vials of 5 Cc., 10 Cc. and 20 Cc., each cubic centimeter containing 1,000 million killed bacilli. E. R. Squibb & Sons, New York.

Gonococcus Vaccine.—This product (*New and Nonofficial Remedies*, 1922, p. 301) is marketed in packages of four syringes containing respectively, 100, 250, 500 and 1,000 million killed gonococci; in packages of four ampules containing respectively, 100, 250, 500 and 1,000 million killed gonococci (with a syringe); in vials of 5 Cc., 10 Cc. and 20 Cc., each cubic centimeter containing 1,000 million killed gonococci. E. R. Squibb & Sons, New York.

Meningococcus Vaccine, Curative.—Meningococcus vaccine (*New and Nonofficial Remedies*, 1922, p. 302) is marketed in packages of four syringes containing respectively, 100, 250, 500 and 1,000 million killed meningococci; in packages of four ampules containing respectively, 100, 250, 500 and 1,000 million killed meningococci (with a syringe); and in vials of 5 Cc., 10 Cc. and 20 Cc., each cubic centimeter containing 1,000 million killed meningococci. E. R. Squibb & Sons, New York.

Pertussis Vaccine, Curative.—Pertussis bacillus vaccine (*New and Nonofficial Remedies*, 1922, p. 303) is marketed in packages of four syringes containing respectively, 100, 250, 500 and 1,000 million killed bacilli; in packages of four ampules containing respectively, 100, 250, 500 and 1,000 million killed bacilli (with syringe); and in vials of 5 Cc., 10 Cc. and 20 Cc., each cubic centimeter containing 2,000 million killed bacilli. E. R. Squibb & Sons, New York.

Pertussis Vaccine, Immunizing.—Pertussis bacillus vaccine (see *New and Nonofficial Remedies*, 1922, p. 303) is marketed in packages of three syringes containing respectively, 500, 1,000 and 1,000 million killed bacilli; in packages of three ampules containing respectively, 500, 1,000 and 1,000 million killed bacilli (with a syringe). E. R. Squibb & Sons, New York.

Pneumococcus Vaccine.—This product (*New and Nonofficial Remedies*, 1922, p. 304) is a suspension of killed pneumococci Types I, II, III and Group IV in equal proportions. Marketed in packages of four syringes containing respectively, 100, 250, 500 and 1,000 million killed pneumococci; in packages of four ampules containing respectively, 100, 250, 500 and 1,000 million killed pneumococci (with syringe); and in vials of 5 Cc., 10 Cc. and 20 Cc., each cubic centimeter containing 5,000 million killed pneumococci. E. R. Squibb & Sons, New York. (*Jour. A. M. A.*, Oct. 28, 1922, p. 1519.)

Neutral Acriflavine.—It has the actions and uses of acriflavine (see *New and Nonofficial Remedies*, 1923). Being neutral in reaction, it is claimed not to have the smarting and irritating effect of acriflavine solutions. Neutral Acriflavine is a brownish-red, odorless, granular powder. It is soluble in less than 2 parts of water, forming a brownish-red solution which fluoresces on dilution and which has a bitter taste. The Abbott Laboratories, Chicago, Ill. (*Jour. A. M. A.*, May 19, 1923, p. 1455.)

Insulin.—An aqueous solution of an active principle from pancreas which effects sugar combustion. The strength of insulin is expressed in "units," one unit being one-third of the amount required to lower the blood sugar below 0.045 per cent and cause convulsions in a rabbit weighing 2 kg. which has been previously starved for twenty-four hours. The administration of insulin to diabetic dogs and to man in severe cases of diabetes mellitus restores to the body the lost ability to oxidize corbohydrate, and glycogen is again stored in the liver. If insulin is administered at suitable intervals to a person suffering from diabetes mellitus, the blood sugar is maintained at a normal level and the urine remains free of sugar. Fat is also burned and, as a result, ketone bodies do not appear in the urine and diabetic acidosis and coma are prevented. The administration of insulin is indicated in cases of diabetes mellitus which cannot be controlled satisfactorily by dietetic treatment. Overdosage of insulin is followed by the development of serious symptoms which demand immediate treatment. Insulin is administered subcutaneously one, two or three times a day before meals. The dosage required to reduce the blood sugar to the normal level must be established for each patient by determination of the blood sugar before and after administration of insulin. In cases of coma or severe acidosis, an initial dose of 15 or 20 units of insulin may be given, followed at 3- to 4-hour intervals by smaller doses with simultaneous administration of glucose.

Insulin—Toronto.—A brand of insulin. It is marketed in 5 Cc. vials containing 10 units in each Cc., and in 5 Cc. vials containing 20 units in each Cc. Connaught Antitoxin Laboratories of the University of Toronto, Toronto, Ontario, Canada.

Barbital—M. C. W.—A brand of barbital—N. N. R. (See *New and Nonofficial Remedies*, 1923, p. 62.) Mallinckrodt Chemical Works, St. Louis, Mo.

Quinine Ethyl Carbonate—M. C. W.—A brand of Quinine Ethyl Carbonate—N. N. R. Mallinckrodt Chemical Works, St. Louis, Mo. (*Jour. A. M. A.*, June 2, 1923, p. 1617.)

THE ATLANTIC
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August, 1923

EDITORIALS

THE PITTSBURGH PROGRAM

The preliminary program of the State Society for the Pittsburgh Session, October 1 to 4, 1923, is printed in this issue of the Journal, and it is the wish of the Committee on Scientific Work that every member of the Society read it over carefully. You cannot help but be impressed with the fact that the Committee has undertaken an intensive study of anuria and of surgery of the kidney and ureter for your edification and benefit at this session.

In what way can you help to make these meetings a success? Statistics show that in cases of anuria treated expectantly the mortality is 72%, while following operation the mortality is 46%. Are not these figures appalling? Has not the mortality in diphtheria been reduced from 75% to 11% with the antitoxin treatment? Yet, we physicians, surgeons and specialists have been unable, up to the present time, to reduce the mortality in anuria below 46%! Is it not time that this subject should receive intensive study? Come to the meetings prepared to report briefly in the general discussions any cases of anuria you may have had during your professional career and any autopsy findings that will throw light on the subject.

Even surgeons and others of wide professional experience encounter so few cases of anuria during their lifetime—unless they are genito-urinary specialists—that the great majority of medical men and surgeons are left floundering around in a sea of bewilderment at a time when drastic measures must be taken and a definite line of action determined upon if we are to reduce the high mortality rate.

If our members individually should have had a dozen or more cases of anuria during their professional careers, we may rest assured that the Society would have heard from them in the section meetings long ago; but since the reverse is the case, the ones they have had they refuse to report on account of their mortality rate. Come out in the open and report them, for be assured your associates have had similar experiences. Let us get together at the Pittsburgh meeting and see if we cannot come to some agreement on the vital questions of how long it is safe to wait before the surgeon is called in consultation; how long it is safe to wait before adopting surgical measures; what surgical methods are best suited to the case in hand; and finally, what is the physiology and pathology present in these cases that causes complete anuria.

The essayists have all promised to answer these questions for you to the best of their ability. The President, the Vice-Presidents, the Trustees, the members of the House of Delegates and the individual members of the Society cannot afford to miss these papers. The experience of many, when collected, should materially aid in reducing the mortality rate in anuria. Apply the acid test between now and the meeting in October by asking all your associates the questions that have been asked you in the lines above and by trying to answer them yourself. When you have done this you can well understand the motives that prompted the Committee to arrange for a study of this subject at our coming meeting.

T. G. Simonton, Chairman,
Committee on Scientific Work.

THE OCTOBER MEETING

At the coming meeting of the Medical Society of the State of Pennsylvania, October 1st to 4th, inclusive, we are to be the guests of the Allegheny County Medical Society, and judging from the preparations they are making, we shall be well repaid for the time spent in attending the scientific meetings, and in addition will be provided with entertainment of a very unique character. The names of the members of the Committees have been published, and they will assist you in making arrangements for the trip or in securing accommodations.

URETERAL STRICTURE

Stricture of the ureter, due to intrinsic inflammatory changes in the ureteral wall, is a disease much more common and of vastly greater clinical significance than it is generally supposed to be by many in the profession to-day. This is to be accounted for by the fact that the textbooks have had little to say about the condition and it has been very lightly touched upon in the medical schools. Apparently it is still regarded as a curiosity and classed with the congenital stricture. On the contrary, it is of very great importance to all who practice medicine or surgery to understand the symptomatology of this rather common disease.

Many patients have been relieved of appendices, tubes and ovaries, or subjected to exploratory operations, on account of symptoms due to ureteral stricture. In this event the patient continues to complain of the same pain as before and the doctor wonders why the operation for chronic appendicitis is so frequently unsuccessful, while the subject decides to try a chiropractor.

In 1902 Kelly anticipated the present-day investigation by assigning as etiological factors of ureteral stricture, the common pyogenic cocci, the gonococcus and the tubercle bacillus. Kelly and Burnam, speaking of traumatic stricture, state that which is the experience of many others working in this field, that "traumatic stricture of the vesicle end of the ureter, following injuries of labor and operations, especially the Wertheim operation for cancer of the cervix, is quite common. As a rule the trauma has so interfered with the blood supply of the organ that there is a lateral necrosis, a continuous leakage of the urine and ureterovaginal fistula. The spontaneous healing of such a fistula, almost invariably means stricture."

Hunner, who has perhaps studied more cases of ureteral stricture than any one, while corroborating the above statement as to the chief cause of traumatic stricture, believes the main etiological factors in the nontraumatic cases are the common pyogenic cocci, the staphylococcus, streptococcus and colon bacillus, and that they are carried by the blood stream to the wall of the ureter from a focal infection in a distant part of the body. According to his theory, infected teeth, tonsils, sinuses, gall-bladder or intestinal tract, constitute the more usual foci.

The pyelitis, so frequently associated with ureteral stricture, may be a secondary infection from the ureteral focus, or the pelvic infection may have been coincidental with that of the ureter.

Tuberculosis accounts for a certain proportion of strictures. In this condition there is usually an associated renal tuberculosis.

It is possible that infected uterine cervical glands, especially those which occur in the broad ligament region, may occasionally be responsible for stricture of the ureter.

As to the symptomatology of ureteral stricture, pain is the most frequent complaint. There is nothing characteristic about the pain; it may be anything from a vague discomfort in the kidney or pelvic region, to a sharp lancinating pain. A large proportion of these patients complain of a discomfort or pain at the site of the lesion. While the lesion may be high, it is most frequently found in the lower third, with pain in one or other of the lower quadrants. Pain in the lumbar region is of frequent occurrence, due probably to the commonly associated pyelitis and hydronephrosis. Some patients give a history of the pain shifting from the lower abdominal region to that of the kidney. Radiation of the pain to the hip and thigh posteriorly is a history frequently obtained. Discomfort in the bladder and frequently of micturition, is occasionally complained of. Severe attacks of renal pain frequently occur in this condition.

Other symptoms which may be mentioned are those referable to the gastro-intestinal tract, and appear to be reflex in origin. Nausea and vomiting are common and sometimes very persistent. Gaseous distention of the abdomen and symptoms referable to the colon are not uncommonly met with. Fever and chills are frequently present, and a history of nervous disturbances can usually be elicited. These nervous symptoms may lead to the diagnosis of neurasthenia. It is rather a shameless way to get out of a difficult situation by saying that the patient is "hipped."

There may be all grades of inflammatory reaction, from only a mild annular infiltration of the ureteral wall to an extensive dense thickening, which may extend an inch or more along the ureter. Some cases present multiple strictures. The chronic inflammation gives rise to fibrous tissue formation. This may be confined to the ureteral wall or there may be an associated periureteritis. The most usual location of ureteral stricture in the female is in the broad ligament region. Another common location is just below the point where the ureter crosses the brim of the true pelvis. Ureteral stricture may be unilateral or bilateral.

As in most medical and surgical conditions a carefully taken history is of great help in establishing a diagnosis. A history of pain in one or both lower quadrants, the hips, the thighs posteriorly, or the lumbar region, is suggestive. To the above may be added chills, fever, gastrointestinal and nervous symptoms. The chronicity of the symptoms is an important point. A history of previous focal infection should not be neglected. A careful palpation of the abdomen with special reference to the lines of the ureters, palpation of the ureters when possible by rectum or vagina, urinalysis, cystoscopy, ureteral catheterization, and roentgenography, constitute the usual procedures upon which a diagnosis of ureteral stricture rests.

Cystoscopy and catheterization of the ureters, particularly in women, by means of the Kelly cystoscope, is a comparatively simple procedure. The urine from the pelvis is examined cytologically, and bacteriologically. An estimation of the size of the renal pelvis is made. If infected, a lavage of pelvis is done. The treatment of ureteral stricture is gradual dilatation. A convenient way of dilating the stricture is by means of wax bulbs, placed on the ureteral catheter. The bulbs may be of any desired size. It is commonly necessary to repeat the procedure, the intervals varying from two weeks to several months. Not infrequently a complete cessation of symptoms is obtained.

Let us not omit a thorough investigation of the urinary tract, in patients presenting indefinite abdominal symptoms, backache, or pain in hip or thigh. W. E. H.

SINGULTUS

In the treatment of a patient, the clinician or practitioner must always keep in mind the pathological condition or conditions and the physiological disturbance that may exist and the relationship of these phenomena. Nevertheless, in his daily rounds he is governed very much in determining the progress of the case by noting the symptoms and change in the physical signs. One of the symptoms frequently met—at times of no special significance, and at other times very disquieting—dreaded by the patient, as well as the attending physician, is hiccough. Singultus is a reflex irritation of a complex nature with afferent impulses to the respiratory center and efferent impulses carried through the phrenics to the diaphragm. The irritation is usually caused by an inflammatory process of the structures supplied by the phrenics and pneumogastrics. An interesting article on this subject appears in the *New York Medical Journal,* June 1, 1922, by Dr. H. Schultz de Brun. The author asserts that the various types may be grouped according to the causative factors. Seven distinct types are demonstrable, namely:

Simple: A type caused by a sudden exit from a warm atmosphere to a cold atmosphere; the sudden chilling of the feet and hands; the taking of a cold plunge or shower; the drinking of a cold potion or cold carbonated waters.

Inflammatory: This form comes on after the onset of such inflammatory diseases of the abdominal organs as gastritis, appendicitis, enterocolitis, suppurative hepatitis, period of discharge, pancreatitis, strangulated hernia, and in any condition causing a high temperature which produces a general congestion of the viscera. In relapsing fever, typhoid and cholera, singultus is a very trying symptom, as it persists night and day until the temperature has dropped. It is usually a fatal sign in septicemia and septicopyemia. It is rare in pyemia, according to Pepper. In phrenic neuritis from exposure to cold and wet, or multiple neuritis involving the origin of the phrenics, that is the third, fourth and fifth cervical nerves, an obstinate singultus may ensue. During the influenza epidemic persistent and obstinate hiccoughs were reported. It was found in the majority of these cases that there was a marked congestion of the upper respiratory tract as well as inflammation of the bronchi and that as soon as this inflammation had subsided, the attacks of singultus disappeared. It has also been seen in pericarditis, in which case it is a significant symptom, death usually ensuing. In meningitis and disease of the spinal cord and of the spine, there have appeared fatal attacks of hiccough. This, however, is a terminal symptom, coming on just before death. In acute appendicitis (perforative gangrenous) followed by collapse without reaction, or in general peritonitis, the onset of hiccough is a bad omen.

Irritative: This class is usually of a transitory nature, when it is brought about by simple acute indigestion or dilatation of the stomach. It is frequently seen after the ingestion of foods of high or low temperature or very spicy foods. In infants it is usually caused by swallowing air with a resulting dilatation. The condition is most common in the gastro-intestinal irritations, and it is especially severe in intestinal obstruction. In the early stages of coryza there is a tendency to swallow the secretions, and hiccough may ensue. This is especially true of young children. The symptom is frequently present when the intestinal tract is infested by tenia. It is an alarming symptom in postoperative conditions, especially when there has been manipulation of the upper abdominal region, causing a reflex irritation of the phrenics and pheumogastrics through an existing inflammation of the viscera supplied by these nerves. Singultus may also be caused by pressure irritation. It has been demonstrated in apoplexy, brain tumors and epilepsy. In the first two, the symptom is usually an unfavorable sign. It also occurs in chest and abdominal tumors when there is pressure upon the phrenic nerve at the point of origin or along its course. In women with goiters, which become larger during the menstrual period, there have been seen attacks of hiccough with cough, aphonia and dyspnea, being caused by pressure on the recurrent laryngeal nerve and on the trachea. Esophageal tumors and irritations have been the cause of persistent hiccough. In empyema the symptom is caused by irritation.

Traumatic: Hiccough was a frequent symptom seen in the practice of war surgery.

Specific: In uremia in chronic nephritis, when the urates and urea begin to diminish rapidly in the urine, and uric acid and cholesterin rapidly begin to increase in the blood, an obstinate hiccough occurs which fluctuates with the increase or decrease of the chemical constituents. Its occurrence is of grave significance. Hiccough also occurs in malaria, gout, diabetes and acute rheumatic fever, the origin of which is quite obscure. De Brun thinks it is caused by a general congestion of organs supplied by the pneumogastrics and phrenics.

Neurotic: Hysterical singultus usually attacks a person who is mentally inferior. Singultus is also seen in cases of epilepsy.

Unknown Origin: The origin of hiccough coming on in bronchial asthma or in a terminal arteriosclerosis is unknown. In shock, hiccough is an occasional complication, especially when there has been an internal injury to abdominal or thoracic viscera.

Treatment: This is classified as physiomechanical or medicinal. The simple type requires no treatment in the majority of cases, but should it persist over five minutes, the following physiomechanical methods may be tried: (1) Tongue traction for two minutes; (2) holding the breath and counting; (3) the blowing of a wind instrument such as a bugle, flute, or cornet; (4)galvanism applied to the neck; (5) lowering of the head and rectal stretching; (6) a sudden shock by taking the patient unawares; (7) sipping of water, hot or cold or ice; (8) pressure on the neck over the fifth cervical; (9) tickle the throat (vomit) and tickle the nose (sneeze); (10) throw head back and put fingers in both ears and swallow water (vagidepressors); (11) gargle with a bitter solution; (12) drink lemon juice and salt; (13) have patient inhale amyl nitrite; (14) mustard plaster applied to the epigastrium; (16) stand on hands or head; (17) flexion of legs and thighs on abdomen; (18) compression of supra-orbital nerves; (19) compression of epigastrium with ice; (20) actual cautery to the abdomen; (21) stretch arms up vertically, open mouth wide and extend tongue; (22) pass stomach tube; (23) should these simple methods fail, give few whiffs of chloroform, which will usually stop any simple persistent hiccough.

In hiccough due to inflammatory processes, the disease should be treated above all, and hiccough attacked by the elimination of toxins through gastric lavage with bicarbonate of soda, soap suds enemas, purges, emetics, as apomorphin or ipecac. When temperature is high, antipyretics may be given. Depressants are also efficacious, if the patient's condition warrants their use. In peritonitis, pancreatitis, typhoid, strangulated hernias, ileus and hepatitis, opiates should be administered early. In cholera, morphin and chloroform inhalations relieve the symptoms. In phrenic and multiple neuritis, counter-irritation and large doses of salicylates should be used. In septicemia and septicopyemia, morphin and atropin give temporary relief. Spraying the nose and throat with a solution of cocain and adrenalin, together with hot applications to the epigastrium and small doses of atropin, have proved very successful.

In the treatment of irritative singultus, always remove the cause of it, if it is possible. If the singultus persists, the physiomechanical methods mentioned above may be tried, and if these are not successful, the following drugs may be used: opium in the form of camphorated tincture or any alkaline mixture, or atropin, alone or with morphin, pushed until physiological effects are seen. There are patients who have continuous attacks of hiccoughs following indigestion. The diet of these patients must be regulated, their bowels kept open freely and they must get a great deal of open-air exercise. These often need tonic treatment such as iron, quinine and strychnin. When children are in the habit of swallowing nasal secretions followed by hiccough, they should have regular nasal douches twice a day and tonsils and adenoids should be removed if they are hypertrophied.

In postoperative conditions, when there is obstinate singultus, it is a good practice to keep the patient under opiates. Also the application of heat to the lower part of the chest and upper part of abdomen, together with flexion of the thigh and legs if the condition permits, is beneficial.

In brain tumor and apoplexy, medication is of little value. Some temporary relief is given by the inhalation of chloroform, and hot applications to the epigastrium. In epilepsy, amyl nitrite and tongue retraction are of benefit. Opiates are the medications of choice when hiccough occurs in specific diseases, as chronic nephritis, malaria, gout, diabetes and rheumamatism. The various organs involved must be assisted to perform their functions without extra strain.

In the neurotic and hysterical types, de Brun has never seen a failure in stopping a true hysterical hiccough with the inhalation of chloroform while the patient was held down. Singultus in bronchial asthma is relieved by the hypodermic use of adrenalin. Morphin is a valuable adjunct if necessary. In arteriosclerosis the iodids and bromids relieve the symptoms if pushed. We sometimes meet a case of singultus in the treatment of which we are often glad for one more remedy; de Brun has supplied that want. G. E. H.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

BAIT FOR SUCKERS

"ONE OF A CHOSEN FEW"

There lies on the writer's desk a neat, attractive appearing circular, describing a "financial project of INTERNATIONAL IMPORTANCE," and giving an imposing list of men interested in the project. Now, this particular project may be all right (the writer wouldn't want to wager his best hat that it is not) but one of their statements is of the type usually adopted by the swindler, and provides, thereby, the text for this editorial: *"You are one of a very select group chosen to participate in this undertaking."*

To be "one of a very select group" is one of the things that seems to appeal to the average human, and no one is quicker to take advantage of this appeal than the swindler. He is usually a past grand master in the art of advertising—which implies that he is a profound psychologist and knows how to put his finger on the weak spots in the character of his fellow man.

Again, to be associated with "a project of INTERNATIONAL IMPORTANCE" is certainly satisfying to a man's ego—that is, until he finds out that he is only the dupe of men sharper than himself. So long as "the profits derived therefrom give promise of a splendid return," to find himself the chosen associate of a company of men formerly connected with internationally known business, is the quintessence of flattery—only the circular does not state just what is the project in which he is to be associated. He has to return the inclosed card for further information.

As aforesaid, all this may be perfectly on the level, but the circular is so cleverly constructed that it bears all the earmarks of a fake concern. *Honest* men usually avoid such an appearance of evil, and if they do not, *they* should be avoided until they learn better.

A short time ago we read an article giving statistics (we regret that we cannot refer you to the exact authority) which showed that ministers are the most gullible class of men in the country and that doctors are second on the list of suckers. All of which is a tribute to the unworldliness and trust in human nature of these professional gentlemen, but all of which will not do in this materialistic age and generation. To let himself be played for a sucker is not fair to a man's own old age; it is not fair to the wife he may leave to face life alone; it is not fair to the children he is in duty bound to educate, and to whom he should leave at least some small protection for the inevitable rainy day. If it is true that physicians are such frequent victims of the unscrupulous, it is time they "cut their eye teeth." We would, therefore, recommend that you

SUSPECT ANY PROJECT

That promises more than the legal rate of interest.

That promises you special privileges because of your connection with it.

Into which someone tries to rush you without sufficient inquiry and consideration.

Without a history—that is too new, that has not proved itself.

That has inexperienced people behind it.

Offered by a firm that does not have a rating. Ratings can usually be obtained through your banker.

That has to adopt blatant advertising tactics to induce prospects to buy. Good investments never go begging.

Offering too great a discount, or selling too far below par.

Offering oil or mining stocks until they are proved.

Offering as a talking point the phenomenal returns from some other similar project.

Handled by brokers of any but established reputation.

Offered you by telegraph or over the telephone, particularly in the middle of the night.

Recommended by someone you do not know. The stranger may be just as honest as you are—but make him prove it.

That will not give you time and every facility for proper investigation.

The safest man to buy from is the man who lives in your home town. He cannot take the midnight train for parts unknown so easily as the transient agent. He usually owns real estate and has a family, so that he is apt to be more careful not to decrease his desirability as a neighbor. If he happens to be your banker, he is still more apt to be conservative—and in this case, to be conservative means to be safe.

Your banker will advise you as a matter of routine. He does not charge anything for the service, and while he is not infallible, he is at least honest. He is a specialist in bonds and stocks, just as the physician is a specialist in treatment of disease. If the banker were to attempt to treat his own illness, you would surely disapprove. Why, then, should you expect to depend on your own judgment in investments?

Unless you can afford to speculate (and few doctors can) be conservative in your investments. Don't listen to the siren song of any get-rich-quick artist. Consult your banker and you will not be apt to have cause to regret it.

GRADUATE MEDICAL EDUCATION IN THE UNITED STATES

Special attention is called to the statement regarding graduate medical education included in the annual report of the Council on Medical Education and Hospitals to the House of Delegates.[1] The undergraduate curriculum can be best developed only when the fields of both premedical and graduate medical education are well worked out. The higher premedical requirements relieved the medical curriculum of the essential courses in physics, chemistry and biology, and provided the student with a better foundation for the more complex medical subjects. A well developed curriculum for graduate medical schools will provide a place for technical subjects now crowded in the undergraduate curriculum. Clinical teachers frequently consume much valuable time in the undergraduate school in discussing subjects which belong in the graduate school. This time would be spent far better in emphasizing the essential principles of the various clinical specialties, in which all general practitioners should have a thorough grounding. With the development of the graduate school, the medical curriculum could be so graded that all subjects would be taught in their logical sequence to the benefit of both undergraduate and graduate students. The former would obtain a better knowledge of general medicine which, in the graduate school, would enable him better to master the advanced courses. The principles governing graduate medical schools contained in the Council's report are of particular importance at this time, since the need of increased opportunities in graduate medical instruction has become so well recognized. Not only should these opportunities be enlarged, but also the character of the training provided should be greatly improved and certain evils which heretofore have developed in graduate teaching should be eliminated, particularly that of granting pretentious and ornate diplomas after ridiculously short or inadequate courses of instruction. The training in each of the various clinical specialties, particularly, should be materially strengthened, whether it be provided in a continuous course of two or more years, or whether provision be made for it in a series of short, graded courses. All short courses should be adequately safeguarded so that they may not become easy short-cuts into special fields for which a longer training is essential. The further development of graduate medical education will have several beneficial results: It will bring into practical use an abundance of clinical material in this country not now being utilized, and convert many large hospitals into active educational centers; there will be a stimulus for better work in the institutions where such medical instruction is given; it will enable more physicians to secure an improved knowledge and skill either for general practice or a chosen specialty, and, finally, this improved medical service will benefit not only the patients in the hospitals but also the public at large.—*Jour. A. M. A.*, July 14, 1923.

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[1] Graduate Medical Education, J. A. M. A., **80**: 1934 (June 30), 1923.

BREAST CARCINOMA TREATED SURGICALLY AND BY ROENTGEN RAY

The clinical and postmortem findings in two cases of breast carcinoma treated surgically and by roentgen ray are reported by Cassie B. Rose, Chicago (*Journal A. M. A.*, June 16, 1923). Both cases were treated surgically and by the roentgen ray, and in both a heavy shadow appeared on the chest roentgenograms after a considerable amount of exposure. In each case, the postmortem revealed pathologic conditions sufficient to account for the shadows on the roentgenograms of the chest.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

JUDICIOUS EDUCATIONAL PROPAGANDA

The Illinois State Medical Society has an active committee on educating the public to the truth about healing practices. This committee, in a survey, interviewed approximately seven thousand individuals in all walks of life, asking two questions, namely, "What did you do the last time you were sick?" and "What led you to do that?" Only six per cent of the replies indicated lack of interest, past, present or future, in any of the healing cults. Of the remaining ninety-four per cent, seven per cent gave previous unsatisfactory personal experiences with doctors of medicine as their reason for consulting so-called cultists. The vast majority had confused impressions regarding the long years of study preparatory to entering the practice of medicine, and but slight conception of the part played by doctors of medicine in the world's scientific, economic and social progress.

As a result of this survey, the committee suggests, first, that the individual members of the society evince as much interest in the treatment of so-called minor ailments as they do in the more serious sicknesses; and second, that the State Society spend money judiciously in advertising. Banks and high-class investment houses found it necessary through advertisements to tell the public who was best equipped to give the public sound financial advice. The medical profession occupies much the same relation to the public and the cults and quacks that honest bankers occupy to the public and fake stock salesmen and promoters, and we must *give the public the truth regarding all schools of healing.*

OCTOBER 1-4, 1923

In this number of the JOURNAL will be found the preliminary program as prepared by the Committee on Scientific Work for the Seventy-Third Annual Session of our Society. The benefits that you as an individual member will receive from the presentation of this program will be largely in proportion to your own efforts to profit thereby.

All meetings, executive, general, scientific and social, will be held in the William Penn Hotel. Those of our members and their families who have attended similar meetings in Pittsburgh will no doubt remember with pleasure the social and sight-seeing entertainments provided by the Allegheny County Medical Society as well as the profitable hospital clinics conducted before and after the annual session.

Far-sighted members will obtain hotel reservations in advance and if travelling by rail remember to ask of their home-town ticket agent a certificate (not a receipt) entitling them to one fare and one-half for a round trip.

1923 MEMBERSHIP LIST

As per instructions of the Board of Trustees, the annual printed list of members, officers and committees of the sixty-three component county medical societies is this year to be distributed only to the officers of the State Society and its component societies. This list has for a number of years been embodied in the July number of the MEDICAL JOURNAL. For the benefit of those who are interested in totals we append a list of the component societies with their total membership as of July 1, 1922, and July 1, 1923. The grand total membership July 1, 1922, was 7,143. The grand total membership July 1, 1923, was 7,207. We trust that the officers of all county medical societies as well as Councilors and Trustees will study closely the figures herewith attached and bend every effort to add materially to the list of members where possible.

County	Membership July 1, 1922	Membership July 1, 1923
Adams	24	22
Allegheny	1,182	1,225
Armstrong	57	55
Beaver	62	61
Bedford	15	16
Berks	135	135
Blair	87	87
Bradford	49	47
Bucks	76	75
Butler	50	52
Cambria	130	135
Carbon	28	28
Center	26	26
Chester	75	71
Clarion	31	31
Clearfield	65	66
Clinton	23	24
Columbia	43	40
Crawford	52	49
Cumberland	38	33
Dauphin	153	157
Delaware	88	86
Elk	24	24
Erie	130	133
Fayette	114	115
Franklin	51	53
Greene	28	28
Huntingdon	36	35
Indiana	60	63
Jefferson	50	52
Juniata	11	12
Lackawanna	185	185
Lancaster	129	123
Lawrence	57	56
Lebanon	36	37
Lehigh	104	108
Luzerne	221	235
Lycoming	113	113
McKean	42	39
Mercer	74	77
Mifflin	25	25
Monroe	15	14
Montgomery	157	154
Montour	23	23
Northampton	134	137
Northumberland	60	59
Perry	15	14
Philadelphia	1,961	1,938
Schuylkill	112	124
Potter	14	15
Snyder	9	9
Somerset	44	46
Susquehanna	17	17
Sullivan	8	6
Tioga	29	28
Union	17	15
Venango	55	53
Warren	48	48
Washington	122	121
Wayne	25	25
Westmoreland	150	150
Wyoming	12	12
York	124	116

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to July 17th:

Allegheny: *Removals*—William T. Hall from Pittsburgh to Box A, Bellefonte (Center Co.); Adam P. Fogelman from Munhall to Sheridan (Lebanon Co.). *Death*—John G. Burke (Univ. of Pittsburgh, '97), of Pittsburgh, June 25, aged 55.

Armstrong: *New Member*—George J. Heid, Nu Mine.

Berks: *Removal*—Isaac B. High from Philadelphia to 227 N. Sixth St., Reading.

Bucks: *Removal*—William J. Wilkinson from Sellersville to 411 E. Main St., New Holland (Lancaster Co.).

Cumberland: *Death*—Edward Y. Rich (Univ. of Penna., '01), of Mechanicsburg, May 6.

Dauphin: *Death*—Jacob W. Shope (Jeff. Med. Coll., '80), of Harrisburg, June 14, aged 78.

Erie: *Death*—Friend L. Hall (West. Res., Univ., '82), of Erie, recently, aged 68.

Indiana: *Death*—William L. Shields (Univ. of Louisville, '85), of Kent, recently, aged 62.

Lancaster: *New Member*—Norman E. Snyder, Lancaster.

Lehigh: *Transfer*—Lawrence H. Bloom, Phillipsburg, N. J., to New Jersey Medical Society.

Luzerne: *New Member*—Henry M. Laing, Dallas. *Removal*—Edward I. Wolfe from Shickshinny to 1110 Wyoming Ave., Forty Fort.

Lycoming: *Removals*—Leon J. Camche from Williamsport to 4721 Fourteenth Ave., Brooklyn, N. Y.; Waldo W. Hull from Williamsport to Burlington (Bradford Co.); Harry C. Fuller from Latrobe to Jersey Shore.

Montour: *Removal*—Frank D. Glenn from State Hospital, Danville, to State Hospital, Torrance (Westmoreland Co.).

Mifflin: *Reinstated Member*—William McLean Baker, Lewistown.

Philadelphia: *New Members*—Francis C. Grant, 3600 Walnut St.; Milton B. Emanuel, 625 Vine St.; Philip Weinstein, 535 W. Olney Ave.; Henry H. Perlman, 1904 N. Franklin St.; Benjamin B. Rittenberg, 5400 W. Arlington St.; Sidney Harberg, 1016 N. Sixth St., Philadelphia. *Reinstated Member*—Lewis C. Scheffey, Lansdowne.

Schuylkill: *New Members*—William F. Leach, 319 E. Center St., Shenandoah; Harry C. Wallace, Pottsville.

Washington: *Removal*—Alden O. Davis from Charleroi to 108 Neville St., Pittsburgh (Alleg. Co.).

Westmoreland: *Removal*—William P. Nolan from Greensburg to 311 Clay Ave., Jeannette.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since June 18th. Figures in first column indicate county society numbers; second column, state society numbers.

June 20	Luzerne	231-232	7186-7187	$10.00
23	Cumberland	34	7188	5.00
25	Luzerne	233	7189	5.00
27	Mifflin	26	7190	5.00
	Beaver	64	7191	5.00
	Schuylkill	126-127	7192-7193	10.00
	Tioga	29	7194	5.00
28	Wayne	25	7195	5.00
29	Lancaster	117-125	7196-7204	45.00
	Lancaster	126-127	7205-7206	10.00
	Berks	137	7207	5.00
July 2	Lehigh	108-110	7208-7210	15.00
	Chester	73	7211	5.00
5	Tioga	30	7212	5.00
6	Armstrong	55	7213	5.00
9	Snyder	10	7214	5.00
10	Columbia	40	7215	5.00
11	Lawrence	51, 53, 56	7216-7218	15.00
	McKean	39	7219	5.00
13	York	117	7220	5.00
16	Luzerne	234	7221	5.00
Luzerne	(1922 dues)	234	7328	5.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg, Pa.

THE SAN FRANCISCO SESSION OF THE AMERICAN MEDICAL ASSOCIATION

The Seventy-fourth Annual Session of the American Medical Association was held in San Francisco June 25-29 inclusive. San Francisco has at previous times been host to the medical profession of the United States, but never in the history of the city has it offered such splendid opportunities for entertainment as well as scientific endeavor as at the recent Session.

While Pennsylvania was not represented as largely at this session as was hoped, yet realizing the distance our men and women had to travel, there were a goodly number registered during the session. The official daily bulletin up to June 29th gave a registration of 73.

The House of Delegates passed upon many important subjects of legislation, and the several sessions of the House were interesting on account of the large attendance of its members. The committees reported promptly on all matters brought before them, and many advances were made in business which relates to the organization of the Association. The reports of the various officers contained much information of value to every doctor in the United States, all of which will be printed in the JOURNAL of the American Medical Association and should be read.

A committee was appointed to draft a memorial to the late Dr. Alexander R. Craig, former secretary of the Association and a member and former resident of Pennsylvania. This committee, of which Dr. Walter F. Donaldson was the chairman, drafted a memorial which was presented to the House and unanimously accepted.

The report of the Bureau of Legal Medicine and Legislation, which is of special interest to us and which is presided over by Dr. William C. Woodward, Executive Secretary, contains much of interest relative to the national prohibition act, the Harrison narcotic law, the Veterans' Bureau and irregular practice. There were also many other valuable reports which are too voluminous to present at this time. Everyone who is interested in the future of the practice of medicine should be conversant with the work of this department of the American Medical Association.

The reports of the Judicial Council and the Council on Health and Public Instruction also contained items of importance to the doctor. The subject of prohibition and its relation to the physician came up under the order of several amendments, which were met with such opposition as to cause all of them to be laid on the table. The relation of the physician to the public was discussed freely and no doubt will be a subject for discussion in the various states during the coming year.

The scientific sessions were well attended and the program was replete with papers of splendid scientific interest. The commercial and scientific exhibits were the best arranged that the Association has ever had, and this was made possible by virtue of the fact that the meetings were held in the Civic Auditorium, a building especially adapted for this type of convention. The social side of the session and the entertainment for the ladies was especially pleasing to those of us from the East because it offered an opportunity for us to see the way "the Californians do it." We wish to express to the members of the profession of California our extreme pleasure and gratification for the way in which they entertained the visiting doctors and their wives.

While Pennsylvania did not have its full quota of elected delegates, yet the delegation was filled by members who were in attendance at the session. These delegates organized and appeared in a body at each session of the House. The following is a list of officers and committees elected at the Session:

President—Dr. Ray Lyman Wilbur, President of Stanford University.

President-elect—Dr. W. A. Pusey, of Chicago.

Vice-President—Dr. W. E. Musgrave of San Francisco.

Secretary—Dr. Olin West of Chicago.

Treasurer — Dr. Austin A. Hayden of Chicago.

Speaker of the House of Delegates—Dr. F. C. Warnshuis, of Grand Rapids, Michigan.

Vice-Speaker—Dr. Rock Sleyster, of Wauwatosa, Wisconsin.

Trustees—Dr. J. J. Upham, of Chicago; Dr. Charles W. Richardson, of Washington, D. C., and Dr. Walter T. Williamson, of Portland, Oregon.

PITTSBURGH, OCTOBER 1 TO 4, 1923

Make preparations now for attending the next Annual Meeting of the Medical Society of the State of Pennsylvania, October 1st-4th. As an active, wide-awake, 100%-physician you cannot afford to miss the next annual session.

In addition to the regular scientific program under the leadership of the very efficient Chairman, Thomas G. Simonton, there will be a Symposium on Diabetes, Thursday evening, October 4, 1923.

I. Development of Insulin from Laboratory and Clinical Standpoint. (30 minutes.) Dr. F. C. Banting, Toronto, Canada.
II. Treatment of Severe Diabetes. (30 minutes.) Dr. John R. Williams, Rochester, N. Y.
III. The Rôle of Diet in Diabetes. (30 minutes.) Dr. C. H. Newburgh, Ann Arbor, Mich.

There will also be a Diabetes Clinic on Friday, October 5th.

I. Laboratory Aspects of Diabetes. (30 minutes.) Dr. F. C. Banting and Drs. zur Horst and Snowden.
II. Insulin in the Treatment of Diabetes. (20 minutes.) Dr. Thomas Ordwar, Albany, N. Y.
III. Insulin: Its Administration and Its Possible Dangers. (20 minutes.) Dr. John R. Williams, Rochester, N. Y.
IV. Diabetic Coma. (20 minutes.) Dr. Allen A. Jones, Buffalo, N. Y.
V. Diet and Diabetes. (20 minutes.) Dr. L. H. Newburgh, Ann Arbor, Mich.
VI. Surgery and Diabetes. (20 minutes.) Dr. John A. Lichty, Pittsburgh, Pa.

The local Committee is preparing a unique entertainment for Tuesday evening, October 2d, at which time all the great and near-great of the Society will have an opportunity to see themselves as others see them; it will be a burlesque of wholesome, innocent fun. It will be something you cannot afford to miss.

The women will be especially welcome to Pittsburgh at this time, as preparations are being made for automobile drives, shopping tours and fashion reviews.

On Wednesday evening, October 3d, will be the President's Reception and Ball, at which time everybody is expected to turn out.

If you have not made your hotel reservation, do so at once either by writing direct to the William Penn Hotel or to Dr. I. H. Alexander, Jenkins Arcade Building, Chairman of the Hotel Committee, who will be at your service and delighted to render you any assistance.

THE GOVERNMENT WOULD BUY BRAINS

At various times *The Journal* has called attention to the lack of judgment used in the United States Patent Office in the issuance of patents of a medical or quasi-medical character. The patent that was issued for the special tapeworm trap, that which was granted for "Perkins' Metallic Tractors," the one given to Quack Sanche for his fraudulent "Oxydonor," the one, called attention to a few months ago, on a preposterous combination as an alleged cure for consumption—these and many other cases could be cited showing the lack of brains in the Patent Office. One of the reasons for this lack becomes apparent. Within the last few days the United States Civil Service Commission has sent out a notice advising the public that on June 20th there will be held an open competitive examination for assistant examiner, Patent Office. The applicants for this position will be examined on the following subjects: physics, mechanical drawing, technics, mathematics and language, with an optional subject to be chosen from the list of chemical engineering, civil engineering, electrical engineering, electrochemistry, general chemistry and mechanical engineering. The applicant must know enough mathematics to be able to answer questions in algebra, plane and solid geometry, plane trigonometry, analytics and differential calculus. He must know enough about mechanical drawing so that when given photolithographic copies of drawings of pieces of machinery he can describe the views, the construction and the operation of the machine represented in such technical terms as would be used by a skilled draftsman in preparing an application for a patent. Further, he must have a knowledge of the grammar and idiomatic construction of both French and German. In technics he must show familiarity with the applied sciences in the field of mechanics, mechanic arts, industrial arts and processes and applied chemistry, and should have "a broad, general knowledge of these subjects." If he passes the examinations in these various subjects he will get the job of assistant examiner at the Patent Office, and be paid the magnificent salary of $1,500 a year (less than $29 a week), with a bonus of about $4.50 a week additional if his services are satisfactory. Is it any wonder that the Patent Office fails to attract the brains of the nation? Some things, however, it seems, the examiners in the Patent Office do not have to know. There is nothing to indicate that even an elementary knowledge of the medical or biologic sciences is necessary—which may explain the weird conception that the Patent Office exhibits of what constitutes "new and useful" inventions in the medical sciences.—*Jour. A. M. A.*, June 16, 1923.

THE PATIENT'S MIND

William House, Portland, Ore. (*Journal A. M. A.*, July 21, 1923), summarizes his paper as follows: The sick body is always accompanied by a sick mind. Many sick persons have no organic disorder, but suffer from the effects of suggestion either from within or from without. If suggestion produces disease, it can also cure disease. Recovery of both mind and body is retarded by fear, worry and misinterpretation of symptoms, and is hastened by their removal. Much of the success of the cultists is due to their ability to inspire hope. All that they do can be better done by trained physicians. There is nothing mysterious in scientific psychotherapy. Every physician consciously or unconsciously uses it in his practice. It consists in finding out what is going on in the patient's mind and relieving it by rational explanation and encouragement based on accurate diagnosis. Psychotherapy should supplement and not displace other recognized forms of treatment. Scientific minds will respond to scientific methods, but child minds can be reached only by methods suited to their limitations.

COUNTY MEDICAL SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Joseph E. Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon.
Lehigh—Willard C. Masonheimer, M.D., Allentown.
Luzerne—H Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D , Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clav McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—H. A. Voshurg, M D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Maurice C. Wentz, M.D., York.

AUGUST, 1923

COUNTY SOCIETY REPORTS

CUMBERLAND—JULY

Cumberland County Medical Society met July 10th, at Hilltop Inn, Shepardstown, Pa. The features of the day were an excellent dinner and an interesting and very highly instructive lecture on "Obstetrics," by J. O. Arnold, M.D., Clinical Professor of Obstetrics, Temple University Medical School.

The paper by Dr. Arnold was thoroughly enjoyed by all those present as he dealt with his subject in a most practicable and thorough manner.

PARKER U. WAGONER, M.D., Reporter.

LYCOMING—MAY

At a regular meeting of the Lycoming County Medical Society, held Friday afternoon, May 11, 1923, the following resolution was presented and unanimously adopted:

"*Resolved,* That the president of the Lycoming County Medical Society appoint a committee of three members to write a letter condemning the prohibition officers of Pennsylvania and the Federal officials at Washington for not furnishing the physicians with permits and prescription blanks upon which to write prescriptions for our patients, and demand fair treatment by them."

The Lycoming County Medical Society desires to put itself on record as emphatically condemning the present mode of administration of the Federal prohibition laws.

We believe that alcohol holds an important place in the list of the valuable drugs: frequently a desirable therapeutic agent, occasionally an essential one and an agent which may determine the life or death of the sufferer.

Such a drug should be readily available to the medical profession, or at least to those who desire to use it. It should be as available as other potent drugs, such as strychnin or morphin. Its use may properly be subjected to governmental supervision; but such supervision should not be of a character to be tantamount to prohibition. The social aspects of the liquor question presents a problem entirely foreign to the medical side.

Our interpretation of the existing legislation is that our lawmakers held opinions similar to the foregoing. We believe that it is the intent of the law to enable the sick to obtain, when necessary, a pure high-grade product of whiskey or alcohol when, in the judgment of the attending physician, such is necessary. It is as much a violation of the Volstead Act (in principle, if not in letter) for the bureaucratic administrators of this law to deprive the physicians of this right as for the "bootlegger" to peddle his vile stuff; both are moral criminals. And what epitaph is vile enough for the prohibition director, who by negligence in issuing the permits prescribed by law, drives the sick sufferer to the use of the inferior whiskey dispensed through illegitimate channels?

We believe that we are within our rights when we respectfully insist that such be corrected. We respectfully demand that the reputable practicing physician be given the rights and privileges to which he is entitled by law and custom; that in his necessary dealings with the prohibition officer, he shall be treated with courtesy, promptness and intelligence.

It has frequently happened where physicians in Lycoming County have been unnecessarily deprived of prescription blanks for periods varying from one week to four months, which we believe should and could be remedied by prompt and efficient attention on the part of those in charge of the prohibition office.

W. E. DELANEY, M.D.,
EDWARD LYON, M.D.
FRED C. LECHNER, M.D.,
Committee.

PHILADELPHIA

June 13th

Dr. Orlando H. Petty: The Practical Use of Insulin in the Treatment of Diabetes.—Insulin is an epoch-making discovery, and miraculous results have rightly been attributed to it. It does not cure diabetes, but helps in the treatment, which it makes more difficult rather than simplifying it. When properly used, it enables the emaciated, semicomatose patient to become properly nourished and to assume his proper position in the world. In using insulin, the patient is weighed and his height taken, and compared to a table of ideal build. The ideal weight for a certain height is found. The amount of work the patient is required to do is estimated and taken into consideration. In a mild case, if the patient cannot stand the ideal carbohydrate food, or if admitted with blood sugar of two hundred fifty and glycosuria, five to twenty units of insulin are administered, depending on the severity. This is estimated on the height of the blood sugar, and not on the amount of sugar excreted. In severe cases, larger doses are given, sometimes eighty to a hundred units a day, to bring the blood sugar to normal. It may be given every hour. Ten or fifteen grams are followed ten or fifteen minutes later by orange juice or other carbohydrate. Cases of profound coma, of gangrene, and of mastoiditis have been successfully treated. No physician can use insulin unless he has mastered the intricacies of diabetic diet, which is always a part of the treatment of diabetes.

Dr. Petty showed slides to illustrate the fall in blood sugar after the administration of insulin.

Discussion by Dr. Henry Bazett, head of the Department of Physiology, University of Pennsylvania: In speaking of measurements, a distinction should be made between accurate and approximate measurements, one method for research and another for clinical work, not necessarily the same. Insulin will stop the hyperglycemia of ether, adrenalin, fourth ventricle puncture, etc. There is a sort of balance between the endocrine glands, the pancreas antagonizing the action of the adrenals, thyroid, and pituitary. Insulin, however, has a definite function besides this antagonistic one. There must be different kinds of diabetes, and the results with insulin are not quite so good with non-pancreatic cases.

Dr. Leon Jonas: When the results of the various clinics using insulin have been published, a standard way of administration will be settled. In the University Hospital, in a case with glycosuria, one hundred grams fat and fifty grams carbohydrate are given. Then if not sugar free, five units of insulin are given once a day until the caloric intake is eight hundred to a thousand above the standard requirements. When a patient is discharged, he is taught how to examine his urine and how to combat the symptoms of hypoglycemia, if they should appear. The economic factor cannot be disregarded, since the cost of insulin is about fifty cents to a dollar a day.

General discussion: Care must be used in starting with a unit, as one unit has been known to reduce the blood sugar below normal.

The longer a patient has had diabetes, the more resistant he is, and the larger the dose of insulin that will be required. More accuracy is needed in treatment.

Dr. Jonas: All cases of coma should be sent into hospitals where insulin is used.

Dr. Petty: A new definition of diabetes is that it is a disease that is characterized by hyperglycemia or glycosuria or both that is completely controlled by insulin. There are not different types of diabetes. Insulin administered in proper doses, with a proper diet, at proper intervals, will control all cases of diabetes. There is not much practical danger of hypoglycemia. A trace of sugar in the urine is an indication of danger. Larger doses are necessary. In a case of actual or threatened coma, a blood sample is taken, twenty-five units of insulin injected into the vein, and twenty-five to fifty units added subcutaneously, the latter repeated according to the clinical manifestations.

Dr. Theodore Diller: "Medicine as a Career Today."—Forty years ago Dr. Diller entered medical school with only a high school education, while now most schools are requiring a degree for entrance. It cost him thirteen hundred dollars to become a doctor, while his son spent fifteen hundred dollars for one year at Princeton, and a medical education to-day costs twelve to fifteen thousand dollars with a leeway. A doctor is not able to marry before thirty-five. After practicing for thirty years, he has no organization to leave, no economic assets, although if he is successful, he may leave a name. This is a low point of view, but doctors are pushed by the economic side, and cannot ignore it. However, it is a noble profession, although other professions are also noble. There is not a physician who does not do some charity work. Medical education is in danger of becoming too scientific. Students should have time to read something besides medicine. No one should attempt to work his way through a medical school, and all doctors should learn how to play as well as to work.

Dr. Moses Behrend: "The Workmen's Compensation Law."—The statement that more than one-half the profession pad their bills is challenged. Badly infected cases come from the large plants with full-time physicians, where there are many extraneous factors causing infection, and it is not a question of having had good care. An employee cannot employ his own physician without the consent of the employer and the insurance company. There ought to be no discrimination between industrial and accident cases, but the latter are always referred to the family physician. The law favors the insurance companies, exemplified by the fact that they declare large dividends, while they claim to be doing charity work. Pennsylvania is the only state with compensation laws where the physician is not paid for his services. A new bill is to be brought before the Legislature, but it cannot be passed this session. More physicians should be willing to serve in public office.

Discussion by Dr. L. E. Evens, Medical Adviser, Ætna Life Insurance Company: Five per cent of the accidents in industry are the result of inefficient, reckless employers, systems and plants, while the other ninety-five per cent are due to carelessness of the employees themselves. The employer should not have to pay for such carelessness. The employee is paid for risks in his salary. Compensation is for the women and children who are not to blame and who must suffer. Insurance companies are merely auditors, looking after the employer's interests. Since the compensation law of 1919, physicians get ninety-five per cent on all bills. From 1911 to 1919, insurance companies did not make a dollar. Should foreign workers be allowed to get their own physicians who treat infections with salves?

Dr. A. C. Wood: The law is clear. Physicians are to receive their fees, and are not paid when the hospital fees are paid. Insurance is not a losing proposition practically, as statistics show that insurance companies pay out forty per cent of what they receive. The law says that the cost shall not exceed the charge for other cases, but industrial cases are charged more than ward cases.

Dr. Charles M. Stiles: The hospital is entitled to send in bills. Medical and surgical service is given by the unpaid staff. The visiting physician or surgeon is not paid by the hospital, and travels a long distance, and the law rightly makes provision for such services. The hospital is paid for only thirty days, and the time should be lengthened.

General discussion: The law is ambiguous, and needs interpretation.

Dr. Behrend: The law is clear enough. We must look out for the new health insurance, or the same thing will happen. A. R. Winter, Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. Charles A. Zeller, for the last twenty-five years a resident of Dalton, died suddenly at his home on July 23d, aged about 50 years.

Dr. Charles M. Rhodes, of Harrisburg, aged 51 years, died recently. He was a graduate of Hahnemann Medical College and Hospital of Philadelphia, class of 1900.

Dr. William Lorne MacDougall, of Scranton, who was graduated from the Medico-Chirurgical College of Philadelphia, 1910, died on June 23d, at the age of 66 years.

Mrs. Ellen Bigler MacBride, mother of Dr. M. Edith MacBride, of Sharon, died at Buhl Hospital, Sharon, on July 2d. Dr. MacBride is the secretary of Mercer County Medical Society.

Dr. Vladimir Kowal, of Philadelphia, who was on the staff of the Stetson Hospital, died on June 21st of nephrolithiasis, at the age of 31 years. He was a graduate of Jefferson Medical College of Philadelphia, class of 1920.

Dr. William L. Shields, of Kent, died on May 27th, aged 62 years. Dr. Shields was graduated from the University of Louisville (Ky.) Medical Department in 1885, and was a member of the school board for many years where he resided.

Dr. Edward Ambrose Sweeney, of Wilkes-Barre, died on June 21st, at Philadelphia, of myocarditis and nephritis. Dr. Sweeney was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1892, and at the time of his death was 57 years old.

Dr. Adolph William Miller, of Philadelphia, who was born in 1841 and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1871, died on July 6th of senility. Dr. Miller was also a druggist, and was formerly demonstrator and lecturer on practical pharmacy at his alma mater.

Dr. Charles N. Brosius, of Shamokin Dam, veteran of the World War and for fifteen years a prominent Snyder County physician, died suddenly from heart failure, recently. He was born in 1878 and was graduated from the Medico-Chirurgical College of Philadelphia in 1907. During the war he served as a first lieutenant at Hoboken and in England. He is survived by his widow.

Dr. John Grant Burke, an active member of the Allegheny County Medical Society, died at his home in Mt. Washington, Pittsburgh, on June 25th. Dr. Burke was born in 1868 and was graduated from the University of Pittsburgh School of Medicine in 1897. He began active practice immediately and soon made a specialty of dermatology. He was a member of the staff of the South Side Hospital. Dr. Burke is survived by his wife and four children, the oldest of whom has just graduated in veterinary medicine. His mother, two brothers and a sister are living also.

BIRTHS

Dr. and Mrs. L. L. Porch, of Johnstown, announced the birth of a son recently.

Dr. and Mrs. Tobias C. Shookers, of Lancaster, announced the birth of a son recently.

Dr. and Mrs. Josiah F. Reed, of Harrisburg, announce the birth of a son, William Marcus Reed, on June 27th.

ENGAGEMENTS AND MARRIAGES

Dr. Frank L. Richards and Miss Julia Craig, of Huntingdon, were recently united in marriage in Altoona.

Mr. and Mrs. Max Winelander, of Philadelphia, recently announced the engagement of their daughter, Ruth, to Dr. William Hartz, also of that city.

Miss Ethel Carver Litchfield, daughter of Dr. and Mrs. Lawrence Litchfield, of Pittsburgh, was recently married in Paris to Baron Willem Van Boetzelaer.

The engagement of Dr. P. M. Vogt, of Reading, and Miss E. Rebecca Rhoads was recently announced at a dinner given by Miss Mary L. Rhoads at Boyertown.

Dr. Charles Allen Pryor, a former resident of Williamsport, and Miss Augusta Keene, of Beckley, West Virginia, were married on June 23d in the First Presbyterian Church of Huntingdon, W. Va. Dr. Pryor is a surgeon at the Chesapeake and Ohio Hospital.

ITEMS

Mr. B. E. Longwell, of Johnstown, is on a fishing trip to Wisconsin.

Dr. and Mrs. Henry Lovett, of Langhorne, are on an extended trip to Yellowstone Park and the Pacific Coast.

Dr. and Mrs. Charles B. Smith, of Newtown, are on an extended trip to the Northwest and the Pacific Coast.

Dr. and Mrs. John A. Logan, of Hatboro, spent the first week in June on an automobile trip through Massachusetts, New Hampshire and Vermont.

Dr. and Mrs. Frank G. Hartman, of Lancaster, have left on a three months' vacation and tour of the western states, Canada and Alaska.

Dr. B. A. Braude, of Johnstown, is taking a six weeks' postgraduate course in gynecology at the Harvard Postgraduate School of Medicine in Boston.

Dr. and Mrs. Jesse E. Packer, of Newtown, spent the last two weeks of June on an automobile camping trip to the Luray Cavern and Natural Bridge, Virginia.

Dr. Henry D. Jump, of Philadelphia, has accepted the chair of applied therapeutics on the staff of the Woman's Medical College of Pennsylvania, Philadelphia.

Dr. and Mrs. Arthur H. Gerhard, accompanied by their daughters and son, of Overbrook, sailed on July 2d on the Rochambeau for Europe, where they will spend the summer.

Drs. J. D. Keiper and T. E. Mendenhall, of Johnstown, took part in the Amateur Trap Shooting contest of the State of Pennsylvania in Greensburg, during the week of June 18th.

Dr. H. P. Decker has returned to Williamsport after a two years' postgraduate course in diseases and surgery of the eye, ear, nose and throat, at the University of Pennsylvania, Philadelphia.

Dr. John I. Fanz has been elected Professor of Pathology, Hygiene and Bacteriology in the School of Medicine of Temple University to fill the vacancy caused by the resignation of Dr. E. T. Asnis.

Dr. T. A. H. Stites has been appointed the Medical Director of Cresson Sanitarium, Cresson, replacing Dr. W. G. Turnbull, who has been appointed the Deputy Commissioner of Health of the State of Pennsylvania.

Dr. William Hardin Sears, of Huntingdon, accompanied by Mrs. Sears, departed for Vienna, Austria, on June 23d, where Dr. Sears will stay several months in original research and study on eye and kindred subjects.

Dr. Ruth Webster Lathrop has been appointed Associate Professor of Physiology in the School of Medicine of Temple University. Dr. Lathrop formerly was Professor of Physiology in the Woman's Medical College, Philadelphia.

Dr. Howard C. Frontz, President-Elect, visited the annual outing of the Wayne, Monroe and Lackawanna County Societies at Buck Hill Falls, in the Poconos, on June 26th. Dr. Frontz spoke to the assemblage on "Current Medical Topics."

Dr. James M. Johnston, of Huntingdon, has returned home after an extensive trip to the Pacific Coast. During the tour Dr. Johnston attended the meetings of the American Medical Association at San Francisco, California.

Dr. Fred Hutchison, President of the Huntingdon County Medical Society, started on a vacation trip to the Kootenay Region of Canada, Thessalon, Ontario, on July 5th. Dr. J. M. Keichline, Jr., also of Huntingdon, accompanied Dr. Hutchison, the trip being made by motor.

On page 714 of the July issue, announcement was made that Dr. Joseph C. Doane, Medical Director of the Philadelphia General Hospital, had been appointed clinical professor of medicine of the Woman's Medical College, Philadelphia. We are advised that this was an error, which we take this opportunity to correct.

Major Charles P. Stahr, of Lancaster, has been appointed commanding officer of the 107th Hospital Company, of the Pennsylvania National Guard to succeed the late Dr. Samuel Heller. Dr. Charles S. Duttenhofer, of New Holland, and Dr. Jere J. Sullivan, of Lancaster, have been appointed lieutenants under Major Stahr.

Announcement was recently made by Governor Pinchot of the appointment of T. Henry Walnut, Philadelphia attorney, as Chairman of the State Workmen's Compensation Board. Mr. Walnut, who since last March has been a deputy attorney general investigating the policing of industrial conflicts, succeeds Harry A. Mackey.

GENERAL NEWS ITEMS

The International Health Conference was held in San Francisco, June 28th to July 6th, in which medical, public health, and educational organizations of the leading nations of the world took part.

Governor Smith of New York State has appointed Dr. Simon Flexner of the Rockefeller Institute of Medical Research, Chairman of the Public Health Council. Dr. Flexner, who has been a member of the Council, succeeds the late Dr. Hermann M. Biggs as its chairman.

Dr. Matthias Nicoll, Jr., of Albany, has been appointed State Health Commissioner of New York to fill the vacancy caused by the death of Dr. Hermann M. Biggs, who had held the position since 1914. Dr. Nicoll has been connected with the State Department of Health of New York since 1915, and for the past four years has served as Deputy Commissioner.

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following named places on the dates specified:

At Washington, D. C., ...September 3, 1923
" Chicago, Ill., ...September 3, 1923
" San Francisco, Cal., ...September 3, 1923

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

THE MILKMAN CARRIER

Within the last year *The Journal* has published reports of two epidemics due to milkmen who were carriers. Fifty-two persons acquired diphtheria in Austin, Texas,[1] from milk sold by a dairy, one of whose employees had a chronic diphtheric ulcer of the nose. None of these died, because antitoxin was promptly administered in effective doses. In Portland, Ore., 487 persons recently became ill with septic sore throat due to milk from a dairy in which an employee carried hemolytic strepticocci in his throat. Twenty-two of these patients died, because there is no effective preventive measure for this type of infection.[2] These epidemics were not the first of the kind to be reported; they probably will not be the last. It seems, however, that sufficient evidence in the way of sickness and death has accrued to show the importance of the milkman and to indicate that he of all persons on whom the public depends for food should be the cleanest and the healthiest. A simple method of control would be to require him to undergo a physical examination every two or three weeks, or at least as often as once a month. Legislation to this end would be unnecessary if those who supply us with milk realized their responsibility in the matter and adopted this or some such method of eliminating carriers.—*Jour. A. M. A.*, June 16, 1923.

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[1] Graham, Malcolm, and Golaz, E. H.: Milk-Borne Diphtheria, J. A. M. A., **79**: 1300 (Oct. 14), 1922.

[2] Benson, R. L., and Sears, H. J.: A Milk-Borne Epidemic of Septic Sore Throat in Portland, Oregon, J. A. M. A., **80**: 1608 (June 2), 1923.

A DOUBLE PULSE PRESSURE CATASTROPHE

Dr. Owen Lee Day, the eminent daylight specialist, of Roxmore, is enjoying an extensive Mediterranean tour as the result of an obituary in the *Roxmore Weakly*, in which it was stated that a very wealthy patient of his departed this life, the cause being, according to his physician, "too great *purse* pressure." It is hoped the grins of the vulgar pack will cease to confront the sensitive scientifico when he returns to his customary duties. O. Pine.

Dr. O. Pine queries: As certain phrasemongers assure us that 90% of all illnesses recover without medical assistance, and as, after listening to the claims of various specialists, it is very evident that the portions of the remaining 10% that escape death owe their salvation to the specialists, can you wonder that the mere physician is approaching alleged extinction?

Dr. O. Pine queries: Will the day ever arrive when the medical profession will make a vigorous drive against inefficient, slacker medical bureaucracy?

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 Incorporated, December 20, 1890

Seventy-third Annual Session of the Medical Society of the State of Pennsylvania

Pittsburgh, October 1-4, 1923

PRELIMINARY SCIENTIFIC PROGRAM

GENERAL MEETING

WILLIAM PENN HOTEL: BALL ROOM.

Tuesday, October 2, 10 A. M.

Call to Order by the President.
Lawrence Litchfield, Pittsburgh.

Invocation.

Address of Welcome.
Hon. William A. Magee, Mayor of the City of Pittsburgh.

Address of Welcome.
Ernest W. Willetts, *President*, Allegheny County Medical Society.

Presentation of Program.
Thomas G. Simonton, Pittsburgh, Chairman of the Committee on Scientific Work.

Announcement of Entertainments.
Harold A. Miller, Chairman of the Local Committee on Arrangements.

Introduction of Delegates from Other Societies.

Installation of the President-Elect.

Stenographer—**Miss F. E. Dillan**, Hume-Mansur Bldg., Indianapolis, Ind.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

No. 1.

President's Address. **Howard C. Frontz**, Huntingdon.

No. 2.

The Importance of Foci of Infection in the Mouth from a Dentist's Viewpoint. (By invitation.) (Lantern demonstration.) (20 minutes.)
L. Wallace Ohl, D.D.S., Pittsburgh.

Outline. Reports on selected cases in which mouth pathology has been eliminated. Lantern slides showing normal and pathologic conditions of the mandible and maxillæ.

Discussion opened by **P. V. McParland**, D.D.S., Pittsburgh, and **C. J. Hollister**, Department of Health, Harrisburg.

No. 3.

The Laurelton State Village and Pennsylvania's Problem of Mental Deficiency. (15 minutes.)
Mary M. Wolfe, Laurelton.

Outline. The Laurelton State Village was established in 1913 in an effort to lessen mental deficiency in Pennsylvania by segregating feeble-minded women of child-bearing age. In the ten years that have passed since that time the state has provided for 150 girls and women at Laurelton. The most recent estimate of the number of mentally defective women of child-bearing age in Pennsylvania approximates 8,000 to 10,000. If any practical solution of this probem in the commonwealth is to be obtained, accommodations for mental defectives must be greatly increased; better use must be made of the institutions in existence; types of defectives most menacing to the state must be given preference in admission to institutions; cases, especially girls, must be placed under supervision earlier; the public must be educated to surgical methods of preventing reproduction, especially as to male defectives; and immigration of lower mental types must be controlled.

Discussion opened by **William C. Sandy**, Director of the Bureau of Mental Hygiene, Harrisburg, and **William W. Richardson**, Mercer.

Wednesday, October 3, 9 A. M.

No. 4.

Ocular Manifestations from a Traumatic Encysted Hemorrhage in the Brain. (10 minutes.)
Edgar J. Stein, Lancaster.

Outline. History of traumatic injury with extremely meager symptoms, only symptom being ocular with occasional pain. After several months pain became intense, ocular symptoms remaining the same. Operation. Evacuation of cyst. Recovery. Some observations on manometer readings.

Discussion opened by **Charles W. Burr**, Philadelphia.

No. 5.

Diagnosis and Treatment of Tonsillar Infection. (10 minutes.) **Judson Daland**, Philadelphia.

Discussion opened by **John A. Lichty**, Pittsburgh, and **William Egbert Robertson**, Philadelphia.

No. 6.

The Relation of Cardiovascular Disease to Symptoms in the Abdomen. (10 minutes.)
John A. Lichty, Pittsburgh.

Outline. A brief résumé of anatomical relations. Reference to the more or less usual abdominal symptoms which may arise in the course of cardiovascular disease. Special reference to enlargements of the liver and also to so-called abdominal angina. The effect, on the other hand, of certain digestive disturbances upon cardiovascular conditions. Conclusions drawn bearing upon diagnosis and treatment.

Discussion opened by **William W. G. Maclachlan**, Pittsburgh, and **James E. Talley**, Philadelphia.

No. 7.

House Dust in Asthma. (10 minutes.)
George P. Meyer, Philadelphia. (Guest.)

Outline. Introductory. Newer etiologic factors, with especial emphasis on house dust. Diagnosis. Skin tests. Treatment. Analysis of over one hundred cases.

Discussion opened by **J. Alexander Clarke, Jr.**, and **James S. McLaughlin**.

SYMPOSIUM ON ANURIA

No. 8.

Postoperative Anuria. (15 minutes.)
Floyd E. Keene, Philadelphia.

Outline. Résumé of the literature bearing upon this subject. Possible etiological factors. Frequency of the condition. Diagnosis Importance of adequate preoperative examinations in order to avoid such a complication. Method of treatment.

No. 9.

Calculous Anuria. (20 minutes.)
John R. Caulk, St. Louis, Mo. (By invitation.)

Outline. Definition. Consideration of the different types. Importance of complete urological study in association with roentgenological investigation. Predisposing factors. Treatment.

No. 10.

Theoretical Discussion of Anuria. (15 minutes.)
J. Edwin Sweet, Philadelphia.

Outline. Death from anuria is due to the retention of some specific but unknown urinary constituent, not to the retention of all urinary constituents. The question will, therefore, be raised for discussion whether we should not consider the possibility of an essential anuria; a condition in which, the other urinary constituents being excreted in sufficient amounts, there is a specific retention of the substance which kills.

Discussion of papers Nos. 8, 9 and 10 opened by Alexander Randall, Philadelphia; Theodore Baker, Pittsburgh, and Henry D. Jump, Philadelphia.

Note.—The Program Committee is anxious that members who have had cases of anuria briefly report them in the general discussion.

Thursday, October 4, 2 P. M.

No. 11.

State Papers.

(a) Quarantine Laws. (5 minutes.)
J. Moore Campbell, Harrisburg.

(b) Prevention of Diphtheria. (10 minutes.)
J. Bruce McCreary, Harrisburg.

No. 12.

High Voltage X-Ray in Cancer. (15 minutes.)
John F. McCullough, Pittsburgh.

Outline. (1) Interest resulting from publicity emanating from Europe. (2) Necessity for the general profession to be acquainted with what is offered. (3) Early development of x-ray therapy. (4) Elements and principles employed in x-ray therapy. (5) Recent advances. (6) Results from personal application of the high voltage x-rays.

Discussion opened by George W. Grier and Forrest L. Schumacher, Pittsburgh.

No. 13.

Surgical Reconstruction of the Nose. (Lantern demonstration.) (15 minutes.)
John W. Bransfield, Philadelphia.

Outline. Brief history of rhinoplasty. Principles of plastic surgery. Value of various types of supporting structures used with special reference to advantages of cartilage. Use of "peak roof" method of Dorrance.

Discussion opened by Fielding O. Lewis, and George M. Dorrance, Philadelphia.

No. 14.

Poisoning of Children by Caustic Alkalies Sold in Grocery Stores. (15 minutes.)
Chevalier Jackson, Philadelphia.

Outline. Reports of cases of fatal burns of the esophagus from the swallowing of lye and various washing powders. Description of lesion found; burns of the mouth, ulcerative esophagitis, cicatricial stenosis, absolute atresia of esophagus; acute gastritis. Description of the labels on the containers showing the lack of conspicuity as to the dangerous nature of the contents. Evidence of parents and others that did not realize the poisonous nature of the alkalies. Necessity for remedial legislation.

Discussion opened by Ellen Patterson, Pittsburgh.

No. 15.

The Practical Use of Insulin in the Treatment of Diabetes. (15 minutes.)
Orlando H. Petty, Philadelphia.

Outline. Insulin in diabetic coma. Insulin in the complications of diabetes, as persistent vomiting and gangrene and infections. Insulin in preparation for surgical operations on diabetic patients. Insulin for diabetics with low tolerance, also those of negative tolerance. The use of Insulin in the preliminary treatment of diabetes to shorten the patient's stay in the hospital.

Discussion opened by Robert L. Pittfield, Philadelphia (Guest), and Howard G. Schleiter, Pittsburgh.

No. 16.

The Trend in Modern Obstetrics. (15 minutes.)
Edward A. Schumann, Philadelphia.

Outline. The features peculiar to obstetrics of to-day are minute and exaggerated prenatal care, surgical induction of labor at established term, and surgical interference in presumably normal cases with the object of shortening or eliminating the second stage of labor. Analysis shows that the vast majority of stillbirths are the result of birth traumatism, and that only a small proportion may properly be ascribed to ineffective prenatal care. Surgical interference in its relation to morbidity and mortality of mother and child has to be studied with the aid of voluminous and accurate statistics.

Discussion opened by Harold A. Miller, Pittsburgh.

SECTION ON MEDICINE

HAWAIIAN ROOM.

Officers of Section

Chairman—Adam J. Simpson, 401 E. Twelfth St., Chester.

Secretary—Charles Falkowsky, Jr., 327 Spruce St., Scranton.

Executive Committee—Howard G. Schleiter, Pittsburgh; Edward J. G. Beardsley, Philadelphia.

Stenographer—Mrs. Irene Hilton Snyder, 1641 Marshall Field Annex, 25 E. Washington St., Chicago, Ill.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 2, 2 P. M.

No. 1.

Address by the Chairman.
Adam J. Simpson, Chester.

No. 2.

Points of Contact Between Internal Medicine and Psychiatry. Edward A. Strecker, Philadelphia.

Outline. Why are the principles and aims of psychiatry frequently misunderstood by internists? The psychic factor in somatic disease. The somatic factor in mental disease from an analysis of 100 consecutive cases. Even if the findings do not indicate etiological relationship they do suggest strongly the importance of physical factors and provide a point of helpful contact. What may psychiatry expect from internal medicine? A better understanding of somato-psychic relationship, possible contribution to etiology, treatment methods, prophylaxis. What may internal medicine expect from psychiatry?

Discussion opened by Frederic Leavitt, Philadelphia.

No. 3.

The Rôle of Nutrition in the Etiology, Course and Prevention of Mental Disorders.
William W. Richardson, Mercer.

Outline. The striking frequency of a poor state of nutrition in acute mental cases. Well known effect of emotion, especially depressive emotion, on the nutritional state. An improved state of nutrition, as manifested by a gain in weight, necessary before recovery can take place in most acute psychoses. Analysis of a series of cases to support this contention. Discussion of the moot point as to whether the gain in weight or the mental improvement occurs first. In view of the facts brought out, it is the manifest duty of the practitioner to watch closely the nutritional state of his patients if mental health is to be preserved. A proper insistence upon the maintenance of good state of bodily nutrition one of the most essential features of a thorough-going mental hygiene program. Striking cases to illustrate the points made in the paper.

Discussion opened by George J. Wright, Pittsburgh, and Clifford B. Farr, Philadelphia.

No. 4.

Hemorrhagic Nephritis. (Lantern demonstration.)
James P. O'Hare, Boston. (By invitation.)

Outline. A series of cases of hemorrhagic nephritis will be presented from a clinical point of view with the pathology in at least two cases.

Discussion opened by Howard G. Schleiter, Pittsburgh.

No. 5.

Facts That Govern the Proper Diet in Nephritis.
Roy R. Snowden, Pittsburgh.

Outline. The kidney function is primarily the excretion of waste products. One of the most important elements in the treatment of any type of nephritis is rest for the kidneys. In order to institute this rest it is most important that the demands made upon it for the elimination of waste products be reduced to the minimum; this is accomplished in large part by the diet, reducing to the minimum those foods that leave waste products that may be excreted by the kidney.

Discussion opened by Edward Weiss, Philadelphia, and George A. Clark, Scranton.

No. 6.

Recent Investigations Concerning Specificity and Practical Value of the New Complement Fixation Reaction in Syphilis.
John A. Kolmer, Philadelphia.

No. 7.

The Interpretation of the Pathogenesis of Lobar Pneumonia in the Light of Experimental Study.

Howard H. Permar, Pittsburgh.

Outline. Older views on the pathogenesis of lobar pneumonia, based on a study of the pneumonic lung. Later views, based on the bacteriologic and on experimental pathologic investigations. The more recent investigations in the field of experimental pathology, which suggest primary lymphatic inflammation and a primary dissemination in the lung by these channels. Personal investigations, using rabbits, indicate the validity of the older claims for a primary aërogenic dissemination with parenchyma first involved in multiple foci beyond the terminal bronchioles. Lobar distribution in the experimental animals attained in 24-36 hours by coalescence of multiple focal lesions, aided by the extension of the inflammatory reaction along lymphatics. The frequency of this type of inflammatory reaction in the human. The relation of the secondary lymphangitis to septicemia, pericarditis, pleurisy and other complications.

Discussion opened by Stanley P. Reimann, Philadelphia.

Wednesday, October 3, 2 P. M.

Report of Executive Committee.
Election of Section Officers.

No. 8.

Nervous Indigestion: A Résumé of One Hundred Cases.

J. Quincy Thomas, Conshohocken.

Outline. Nervous indigestion, which is a diagnosis made by many physicians and sometimes patients, is seldom correct. A thorough study of these cases will often show that many patients are suffering from such conditions as pulmonary tuberculosis, organic conditions of the stomach and intestines, heart and renal diseases, gall-bladder and nervous system. True functional disturbances of the gastro-intestinal tract are in the minority.

Discussion opened by E. J. G. Beardsley, Philadelphia.

No. 9.

The Ambulatory Treatment of Gastric Ulcer.

Martin E. Rehfuss, Philadelphia.

Discussion opened by John A. Lichty, Pittsburgh.

No. 10.

The Management of Carcinoma of the Stomach.

Joseph Sailer, Philadelphia.

Outline. The treatment of defects in secretion; the treatment of defects in motility; the treatment of defects in nutrition; the question of operation.

Discussion opened by Joseph C. Ohail, Pittsburgh.

No. 11.

Heart Disease and Pregnancy.

James D. Heard, Pittsburgh.

Outline. To solve the problem of management of the pregnant cardiopath, it is necessary to secure coöperation between obstetrician and internist; initiative rests largely with obstetrician. Cardiac clinics and medical consultants in connection with obstetric service are of relatively little value unless routinely used. Preventive measures for coming generation of mothers must be applied by this generation of physicians. Pregnant cardiacs require careful medical supervision throughout pregnancy; under such conditions therapeutic abortion seldom indicated. Methods of handling patients whose heart failure is complicated by pregnancy.

Discussion opened by Andrew P. D'zmura, Pittsburgh, and Harold A. Miller, Pittsburgh.

No. 12.

The Evaluation and Treatment of Abnormal Blood Pressures.

David Riesman, Philadelphia.

Discussion opened by James E. Talley, Philadelphia.

No. 13.

The Pathology of Diseases of the Pancreas.

Robert A. Keilty, Danville.

Outline. The purpose of this paper is to present briefly the pathologic lesions which are commonly met with in the pancreas, with a detailed description of the pancreas in diabetes.

Discussion opened by Henry D. Jump, Philadelphia, and George B. Sickel, Chester.

No. 14.

A Consideration of Polycythemia with Report of Cases Illustrating Several Varieties.

Edward Weiss, Philadelphia.

Outline. Definition of terms polycythemia, erythremia and erythrocytosis. Anology to leukemia and leucocytosis. Presentation of four cases illustrating several varieties of polycythemia and emphasizing necessity of searching for the cause of condition.

Discussion opened by W. W. G. Maclachlan, Pittsburgh.

Thursday, October 4, 9 A. M.

No. 15.

The Management of Convalescence.

Arthur C. Morgan, Philadelphia.

Outline. Clearing of active symptoms does not mean complete recovery from any infection or affection. The physician's duty is to keep patient under observation until such time as effects of illness have entirely subsided. Danger of overwork of heart, effort syndrome, renal damage and psychasthenia because of overwork before recovery is fully established. Discussion of leading points with suggestions for treatment.

Discussion opened by Jesse L. Lenker, Harrisburg.

No. 16.

The Importance of an Exact Diagnosis in Acute Articular Rheumatism.

W. Egbert Robertson, Philadelphia.

Outline. A plea for the limitation of the term rheumatism. True rheumatic fever essentially heart disease. A loose use of the word rheumatism more or less unconsciously breeds a spirit of neglect, if not contempt. Hence the impossibility of procuring for the real victim, the prolonged rest so absolutely essential in the management of heart disease.

Discussion opened by Judson Daland, Philadelphia.

No. 17.

Diagnosis and Treatment of Pernicious Anemia and Severe Secondary Anemias.

Alfred Stengel, Philadelphia.

Outline. Discussion of the nature of pernicious anemia involving a consideration of the conditions to be followed in classifying a severe anemia as pernicious anemia. Particular reference will be made to the question whether pernicious anemia is invariably a hemolytic form of anemia, and the discussion of the importance of cord lesions as diagnostic criteria will be offered.

Discussion by Lawrence Litchfield, Pittsburgh, and James D. Heard, Pittsburgh.

No. 18.

Blood Transfusion, Its Indications and Technique.

Harold W. Jones, Philadelphia.

Outline. Citrated vs. whole blood transfusions. The cause of reaction. Transfusion in children. The reaction of blood to transfusion in primary and secondary anemia. Transfusion in purpura. Transfusion in septicemia. Transfusion in nephritis. Cause for lack of general use of transfusion in medical conditions.

Discussion opened by Alexander H. Colwell, Pittsburgh.

No. 19.

Basal Metabolism. The Value of its Estimation.

Henry K. Mohler, Philadelphia.

Outline. The known disorders of the body that have increased or decreased basal metabolic rates. Its value in the differential diagnosis of these diseased conditions, most difficult at times to differentiate, viz., thyroid, pulmonary tuberculosis. The discussion of the value of the basal metabolic rate in determining the proper kind of treatment and the degree of its efficiency in diseases having abnormal metabolic rates with special reference to thyroid gland disturbances.

Discussion opened by Roy R. Snowden, Pittsburgh.

No. 20.

The Treatment of Encephalitis.

George Wilson, Philadelphia.

Discussion opened by William W. Richardson, Mercer, and John H. W. Rhein, Philadelphia.

No. 21.

Migraine with Especial Reference to Paralytic Manifestations.

George J. Wright, Pittsburgh.

Outline. The usual phenomena in migraine are sensory, but occasionally definite paralytic symptoms are seen. If the cause of these symptoms is a focal cerebral angiospasm, migrainous attacks in the degenerative period of life are not free from danger.

Discussion opened by William H. Mercur, Pittsburgh.

SECTION ON SURGERY

BALL ROOM.

Officers of Section

Chairman—William L. Estes, Jr., Bethlehem.

Secretary—Harold L. Foss, Geisinger Hospital, Danville.

Executive Committee—T. Turner Thomas, Philadelphia; Elwood N. Kirby, Philadelphia; Alfred C. Wood, Philadelphia.

Stenographer—Mrs. M. C. Repp, 926 S. Sixtieth St., Philadelphia, Pa.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 2, 2 P. M.

No. 1.

Address by the Chairman.
William L. Estes, Jr., S. Bethlehem, Pa.

No. 2.

Contraindications to Cholecystectomy.
John H. Gibbon, Philadelphia.

Outline. It is admitted that formerly many gall-bladders were drained which should have been removed, but it is believed that the reverse is true to-day. The condition of the gall-bladder does not alone constitute the criterion on which we must decide between drainage and removal. The condition of the patient and the ability and the experience of the operator are factors which must be considered.

It would be well at this time to try to determine the type of gall-bladder and the other conditions which would render drainage a better procedure than removal. And it is the object of the writer to attempt this determination.

No. 3.

Recurrent Cholelithiasis.
H. Ryerson Decker, Pittsburgh.

Outline. Recurrence due to calculi overlooked at previous operation or those formed anew. Frequency about 2%. Site usually in gall-bladder or common duct. Main factors same as in primary cholelithiasis—duct obstruction and infection. Clinical features—Case Reports. Treatment. Surgical prophylaxis important; includes early primary operation, thoroughness in removal of calculi, thorough drainage in infected cases. Vaccine therapy may help. Medical measures of doubtful utility.

Discussion of papers Nos. 2 and 3 opened by Donald Guthrie, Sayre, and (by invitation) Thomas Cullen, Baltimore, Md.

No. 4.

Treatment of General Peritonitis Following Ruptured Appendix. Albert F. Hardt, Williamsport.

Outline. Severity of peritonitis depends upon degree and extent of peritoneal inflammation and type of infection. Operability depends upon degree and extent of peritonitis, appearance of patient, rate and character of pulse, temperature, extent and degree of muscular rigidity, leukocyte count, etc. Circumscribed and diffuse peritonitis. Operation indicated in circumscribed peritonitis. In diffuse peritonitis, when patient is very ill, Oschner treatment usually preferable. When patient is not very ill, operation indicated. Much diversity of opinion regarding Oschner treatment. Time to operate one of most difficult problems in surgery. Selection of anesthetic of great importance. Advantages of nitrous oxid or local anesthesia. Adequate drainage most essential. Postoperative treatment should be carefully managed. Opinions of surgeons.

Discussion opened by Walter Shaw, Ridgway, and Randall B. Hayes, Jersey Shore.

No. 5.

Chronic Duodenal Obstruction. (Lantern demonstration.) Jesse P. Griffith, Pittsburgh.

Outline. Frequency. Embryologic and anatomic factors to be considered as factors favoring a duodenal stasis. "The duodenum is a complicated structure of considerable importance and whilst it will withstand considerable insult in the form of adhesions, or being a part of a ptosis of contiguous structures which interferes with its mechanism, there comes a time when the normal dependent portion becomes embarrassed to such an extent that there is more or less of a constant residue of duodenal contents upon the mechanics of the upper gastro-intestinal tract and a toxic influence in a general way."

Etiology of chronic duodenal obstruction. Ptosis of transverse colon with or without stomach involved. Jejunum dropping perpendicularly instead of having the normal sweep of the bowel into the left renal fossæ; such direct drop produces a sharp angulation of the duodeno-jejunal angle. Small bowel with a short mesentery pulling on the superior mesenteric vessels. Various adhesive bands congenital and acquired. Cysts and growths at the head of the pancreas, etc. Symptomatology. Depends a great deal on the area of duodenum involved and extent of involvement. Treatment—medical, surgical. Surgical: first portion—dividing adhesions, removal of adherent gall-bladder, etc. For the chronic dilated dependent portion of the duodenum where we have a more or less constant residue the operation of duodenojejunostomy appears to be the procedure of choice. Report of cases operated. Technique of duodenojejunostomy. Lantern slides showing various types of obstruction and steps in operation Conclusions.

Discussion opened by John A. Lichty, Pittsburgh, and John B. Deaver, Philadelphia.

No. 6.

The Practice of Surgery under the Pennsylvania Compensation Laws. Lever F. Stewart, Clearfield.

Outline. The surgeon's objection to the law. The fees for first thirty days. The ruling covering death in ten days. The relation of hospital to surgeon. The right to sue for fees. The standing of an expert.

The law's objection to the surgeon; testimony at hearings. Ignorance of law. Divergence of opinion. Surgeon's failure to salvage. Surgeon's neglect of mental treatment of injured.

The injured's criticism of the surgeon: failure to follow up, after discharge. Failure to explain the possibility of charity treatment. Failure to reassure injured. Failure to salvage. Reporting of cases for reconstruction surgery and rehabilitation.

The insurance company's and employer's gain as a result of rehabilitation. The profit in human salvage from a financial point of view. Average saving $2,000.00 per case. The surgeon's opportunity to force reform by virtue of achievement.

Discussion opened by Alfred C. Wood, Philadelphia, and Jonathan M. Wainwright, Scranton.

Wednesday, October 3, 2 P. M.

SYMPOSIUM ON PELVIC SURGERY

No. 7.

Practical Points in Pelvic Surgery.
Thomas S. Cullen, Baltimore, Md. (By invitation.)

Outline. The operative and postoperative difficulties the author has met with in treating cervical and perineal lesions. Examples of pelvic and lower abdominal conditions where operation has appeared impossible or seemed fraught with great danger and where by the adoption of some simple procedure the operation became a relatively easy one to perform.

No. 8.

Preservation of the Ovaries in Pelvic Surgery.
Brooke M. Anspach, Philadelphia.

Outline. The function of the ovary and its value to the individual; effects of partial, unilateral and bilateral removal and the influence of age, social position and nervous equilibrium. Technique of pelvic operations which conserve the ovary and the importance of preserving its blood supply. Degeneration of conserved ovaries. Resection versus total removal of the ovary on one side. Ovarian transplants; ovarian substance and its therapeutic value. Results of conservation of ovaries in a series of consecutive private cases. Conclusions.

No. 9.

A Review of the Present Status of Minor Surgical Procedures in Gynecology.
Raleigh R. Huggins, Pittsburgh.

Outline. Many minor operations may be avoided in the future by better care in the treatment of women after delivery. Attention during the puerperium and later, if necessary, will lessen the number of chronic lesions of the cervix and cases of subinvolution, which often result in displacements and later lead to the necessity for operative treatment. Good judgment is necessary in the selection of various gynecological operations which are sometimes used without careful consideration of both local and general condition.

Discussion of papers Nos. 7, 8 and 9 opened by Harvey Smith, Harrisburg, and Elmer Hess, Erie.

No. 10.

Surgical Treatment of Complete Uterine Prolapse.
Barton C. Hirst, Philadelphia, Pa.

Outline. The necessity of understanding the complex nature of the injuries causing prolapsus uteri. The interdependence and independence of rectocele, cystocele and the injuries or overstretching of the uterine ligaments. There may be prolapse with or without either rectocele or cystocele and there may be either rectocele or cystocele without prolapse. In the operation each division of the genital canal must be dealt with separately, according to its condition; namely, posterior wall and pelvic floor, supports of the bladder and uterine ligaments in addition to the treatment required by the uterus itself for elongation of the lower uterine segment, hypertrophic metritis, ulceration of the cervix and hyperplasia of the endometrium.

No. 11.

The Present Status of Treatment of Carcinoma of the Uterus. **John G. Clark**, Philadelphia.

Outline. Review of statistics relative to the radical operation for cancer of the cervix and of the fundus in comparison with the ultimate results obtained by the employment of irradiation. A review of the literature of these two subjects with comments based upon personal experience.

No. 12.

Focal Infection as a Danger to the Pregnant Woman. **James L. Gilmore**, Pittsburgh.

Outline. Diagnosis, predisposing cause of early toxemia, miscarriage, late toxemia, pyelitis and death of the fetus in utero. Treatment; best time; danger; results. Conclusions.

Discussion of papers Nos. 10, 11 and 12 opened by **Floyd E. Keene**, Philadelphia, and **Samuel J. Waterworth**, Clearfield.

Thursday, October 4, 9 A. M.

SYMPOSIUM ON SURGERY OF THE KIDNEY AND URETER

No. 13.

Surgery of the Kidney and Ureter. (Lantern demonstration.)

Edward S. Judd, Rochester, Minn. (By invitation.)

Outline. Surgical approach to the kidney. Incision with the preservation of the ilioinguinal and iliohypogastric nerves. Exposure of the renal pelvis. Transverse pyelotomy. Removal of stones, fluoroscopic examination; suture of the pelvic opening. Indications for nephrectomy. Two-forcep method of controlling the vascular pedicle. Mortality in nephrectomy for various conditions. Ureter: Surgical approach for stone in the uretero-vesical area. Incision for lesions in the upper ureter. Complete nephro-ureterectomy (without contamination of the operative field) for infections and malignant conditions of the kidney and ureter.

No. 14.

Modern Diagnostic Methods in Renal and Ureteral Surgery. **Enoch H. Adams**, Danville.

Outline. The determination of kidney function by use of phenolphthalein; by elimination of indigocarmin; differential functional tests and the field of biochemistry. Pyelography; Media used for injecting pelvis of kidney. The use of shadow catheters in locating stones. Advancement since the advent of the Bucky diaphragm in renal and ureteral roentgenology. Localization of ureteral and kidney stones. The significance of hematuria in tuberculosis, tumors, stones and acute nephritis. Differentiation of renal, appendicular and gall-bladder conditions. Kidney infections, pyelonephrosis, pyelitis, tuberculosis, etc. Necessity for coöperation between pathologist, roentgenologist and clinician in the study of renal and ureteral conditions.

No. 15.

Treatment of the Small Ureteral Calculus.(Lantern demonstration.) **Carlyle Haines**, Sayre.

Outline. The frequency with which ureteral calculi confront the surgeon and the general practitioner, and the importance of making a correct diagnosis to lessen, if possible, otherwise needless surgery. The factor played by strictures and anomalies in preventing calculi from passing. Only a small percentage of calculi require surgery for their removal. The majority will pass if given time and assisted by ureteral dilatation. The need of routine ureteral catheterization to determine the presence of postoperative strictures following ureterotomy for calculi.

No. 16.

Treatment of Accidental Occlusion of the Ureter. **P. Brooke Bland**, Philadelphia.

Outline. Recurrent observations indicate that occlusion, partial or complete, occurs much more frequently than is generally believed. The lesion results mostly from deep pelvic surgery as performed by the gynecologist and particularly in the operation of panhysterectomy. The radical operation for uterine carcinoma exposes the ureters to unusual danger. Accidental injury or occlusion probably occurs more frequently during the prosecution of this operation than any other. In the modern method of removing the uterus through the vagina, ureteral injury or occlusion is not likely to occur, vaginal hysterectomy as formerly performed by progressive ligation from below upward was not infrequently responsible for accidental injury to both the bladder and ureters. With the etiology of the accident in mind the best treatment lies along prophylactic lines.

Discussion of papers Nos. 13, 14, 15 and 16 opened by **Benjamin A. Thomas** and **F. Hurst Maier**, of Philadelphia, and **Charles H. Aufhammer**, Pittsburgh.

No. 17.

Review of Five Years of Fracture Work with Special Reference to Open Reduction. (Lantern demonstration.) **Hugh E. McGuire**, Pittsburgh.

Outline. Report of cases of fracture of skull, spine, pelvis, clavicle, scapula, humerus, bones of forearm, femur and bones of the lower leg—900 cases in all. Various methods of treatment discussed, and reasons given for the various types of operations.

Discussion opened by **T. Turner Thomas**, Philadelphia, and **William L. Estes, Sr.**, S. Bethlehem.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

ROOMS B-C.

Officers of Section

Chairman—**William Hardin Sears**, 514 Penn St., Huntingdon.

Secretary—**Nelson S. Weinberger**, Sayre.

Executive Committee—**George B. Jobson**, Franklin; **Luther C. Peter**, Philadelphia; **George M. Coates**, Philadelphia.

Stenographer—**Miss F. E. Dillan**, Hume-Mansur Bldg., Indianapolis, Ind.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 2, 2 P. M.

Address of the Chairman.

William Hardin Sears, Huntingdon.

No. 1.

Concerning Vernal Conjunctivitis—Some Phases Connected with its Duration, Clinical Features, Prognosis and Treatment.

William C. Posey, Philadelphia.

Outline. Analysis of a number of cases observed over a long period of years. Most cases show a tendency to self-limitation in from eight to ten years. The more aggravated types may persist for twenty years or even longer. Prognosis for complete recovery in the former class of cases good; in the latter, more guarded in amount of corneal complications, either from opacities resulting from pressure by the unusually large and hard granulations sometimes observed in this type, or from distortion of the cornea in consequence of the weakening of the tissues of the membrane by pericorneal inflammation, leading in a few cases to conical cornea. Gongales observations. Heredity at times factor in the pathogenesis. Report of cases Doubtful influence of locality as a determining factor. Of all remedial agents radium thus far the best, alleviating collyria; preferable to any caustics. In aggravated cases paring down of the hardened granulations with a sharp knife is necessary to avoid corneal injury from pressure.

Discussion opened by **G. Oram Ring**, Philadelphia.

No. 2.

Personal Experience in the Management of Heterophoria. **William Zentmayer**, Philadelphia.

Discussion opened by **William W. Blair**, Pittsburgh.

No. 3.

The Surgical Treatment of Squint with Special Reference to the Choice of Operation Best Suited to an Individual Case.

Luther C. Peter, Philadelphia.

Outline. In the first part of the paper the author reviews the mechanical effects of tenotomy, tucking and resection with advancement. Resection is further divided into those operations which include a shortening of the muscle alone and those in which the capsule and conjunctiva are shortened and advanced with the muscle. In the second part are discussed the indications and contraindications of these operations in alternating and unilateral convergent and divergent squint. The conclusions drawn are: 1. Tenotomy is rarely justifiable and in most instances contraindicated. 2. Tucking, although an uncertain surgical procedure, may be used to advantage in selected cases. 3. Resection, with or without advancement as indicated, is at all times the operation of choice.

Discussion opened by Burton Chance, Philadelphia.

No. 4.

The Rôle of Impacted and Unerupted Teeth in Ocular Disorders. (Lantern demonstration.)
Edward Stieren, Pittsburgh.

Outline. Various ocular disorders, pathological and functional, may have their origin in an impacted or unerupted tooth. Report of cases and review of literature.

Discussion opened by George B. Jobson, Franklin.

No. 5.

Remarks upon the Removal of the Cataractous Lens by a Vacuum Method; with Presentation of an Instrument for Preventing Vitreous Loss.
Frank C. Parker, Norristown.

Outline. The Barraquer operation is far superior to the Smith operation both in technique and safety. Removal of the cataractous lens by means of the vacuum procedure is very interesting, and when accomplished without mishap, all that can be desired. More skill is required and more extreme care must be exercised to accomplish a good end result than is demanded by the regular combined extraction. Barraquer's procedure may be modified by employing the usual methods of incision and iridectomy, then bringing into use the vacuum for extraction of the lens. The vacuum method will probably never supplant the usual procedures in common practice for the following reasons: 1. The only advantage is the elimination of a subsequent needling operation which is nothing to worry about. 2. Visual results are no better. 3. Increased dangers. 4. More skill required. 5. Not adapted to the majority of operators. 6. Too many eyes will be lost in perfecting a procedure that offers no better end results. As many operators will try this method, I have devised a vacuum cup handpiece which makes it impossible to withdraw more than one, or at the most, two minims of vitreous, should the instrument be plunged directly into the vitreous, with any amount of vacuum in operation. Buccal method of creating vacuum found to be satisfactory.

Discussion opened by Burton Chance, Philadelphia.

No. 6.

Recurrent Hemorrhage Into the Vitreous.
Leonard G. Redding, Scranton.

Discussion opened by Clarence M. Harris, Johnstown.

Wednesday, October 3, 2 P. M.

Presentation of Cases, Specimens and Instruments.
Report of Executive Committee.
Election of Officers.

No. 7.

The Ophthalmoscope in General Medical Diagnosis. (By invitation.) Edward Jackson, Denver.

SYMPOSIUM ON SINUS THROMBOSIS

No. 8.

Etiology and Diagnosis of Cavernous Sinus Thrombosis. (Lantern Demonstration.) George E. deSchweinitz, Philadelphia.

Discussion opened by Edward B. Heckel, Pittsburgh.

No. 9.

Etiology and Diagnosis of Lateral Sinus Thrombosis.
S. MacCuen Smith, Philadelphia.

Outline. Complicates both acute and chronic otitic suppuration; in former years more frequently found in the chronic type, but recently oftener in the acute form of the disease. Marasmic conditions a causative factor. In simple uncomplicated cases the diagnosis should be comparatively definite. Temperature, pulse, respiration, good mentality, edema and tenderness over mastoid tip, posterior triangle and mastoid vein quite characteristic. Positive blood cultures an aid, but thrombosis may be present with negative findings. Rigors suggestive and repeated chills almost diagnostic of sinus thrombosis; their continuation ominous. Symptom-complex makes diagnosis difficult. In last analysis trained judgment of clinician must determine the diagnosis.

Discussion opened by John F. Culp, Harrisburg.

No. 10.

Treatment of Cavernous and Lateral Sinus Thrombosis.
Ewing W. Day, Pittsburgh.

Outline. Treatment surgical. Exposure and inspection of sinus. Location, nature and extent of clot. Control of hemorrhage. Jugular involvement. Ligation versus excision. Cavernous thrombosis, treatment generally unsuccessful.

Discussion opened by J. Homer McCready, Pittsburgh, and Fielding O. Lewis, Philadelphia.

Thursday, October 4, 9 A. M.

Exhibition of Specimens and Instruments.
Presentation of Cases.

No. 11.

Bronchoscopic Treatment of Pulmonary Suppurations and Bronchial Asthma. (Lantern demonstration.)
Moore, Philadelphia.
Robert M. Lukens, Philadelphia.

Outline. Types of cases best suited for treatment. Technique of treatment followed at the Bronchoscopic Clinic, Jefferson Hospital. Reports of cases under observation for one year. Observation on the bronchoscopic treatment of bronchial asthma and methods used. Report of work done in past six months on the bacterial findings in tracheobronchial asthma.

Discussion opened by Frederick J. Bishop, Scranton.

No. 12.

The Gradenigo Symptom Complex. (By invitation.)
W. B. Chamberlain, Cleveland, Ohio.

Discussion opened by George M. Coates, Philadelphia.

No. 13.

Foreign Bodies in Respiratory Tract and Esophagus. Clinical Notes of General Interest. (Lantern demonstration.) Ellen Patterson, Pittsburgh.

Outline. Necessity for consideration of foreign body in etiology of disease of the respiratory tract and esophagus in children. Possibility of foreign body coincident with onset of acute exanthemata in children. Advisability of roentgenographic study of all children in hospitals for foreign body.

Discussion opened by Chevalier Jackson, Philadelphia.

No. 14.

The Present Status of Vestibular Tests from the Standpoint of the Otologist.
Lewis Fisher, Philadelphia.

Discussion opened by Seth A. Brumm, Philadelphia, and George W. MacKenzie, Philadelphia.

No. 15.

Diagnosis and Treatment of Chronic Maxillary Sinusitis. John B. McMurray, Washington.

Outline. 1. Between the most advanced maxillary sinus disease and the normal sinus, all grades of sinus diseases may exist. It is much easier to prove that a sinus has a well advanced disease than it is to detect a sinus with a mild involvement, while the latter may have a very deleterious effect on the general health of the patient. 2. The clinical types of maxillary sinus disease. 3. Diagnosis depends upon history, inspection of nares, transillumination and x-ray. The result of examination will divide the cases into two classes: (a) Those with unquestioned sinus disease as proved by history, inspection, transillumination and x-ray; (b) Those in which the history is suggestive but cannot be definitely decided by any of the above methods of examination. It is in this class that irrigation is of much help. 4. The dangers of irrigation. A review of literature relative to dangers of irrigation. Report of a case of sudden unconsciousness following irrigation, with recovery. How to avoid the dangers associated with irrigation and yet retain diagnosis or treatment of maxillary sinus disease. 6. Treatment should be conservative. All cases should be given the benefit of a window resection with irrigation before more radical procedure is instituted. The Caldwell-Luck operation, when indicated, gives the best results, as it affords ample room for inspection and cleansing of the sinus at the time of operation, leaving a free opening into the nose for ventilation and after treatment.

Discussion opened by John J. Sullivan, Jr., Scranton, and Robert F. Ridpath, Philadelphia.

No. 16.

Diagnosis and Treatment of Vincent's Angina.
George R. S. Corson, Pottsville.

Outline. Brief review of history. Its prevalence. Importance of differential diagnosis. Bacteriology and treatment.

Discussion opened by Mathew S. Ersner, Philadelphia.

SECTION ON PEDIATRICS

BLUE ROOM.

Officers of Section

Chairman—J. Claxton Gittings, 1828 Pine St., Philadelphia.

Secretary—Robert K. Rewalt, First National Bank Bldg., Williamsport.

Executive Committee—William N. Bradley, Philadelphia; Henry J. Cartin, Johnstown; Henry T. Price, Pittsburgh.

Stenographer—Mr. T. F. Arnold, 335 Land Title Bldg., Philadelphia, Pa.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 2, 2 P. M.

No. 1.

Address by the Chairman: The Future of Pediatrics.
J. Claxton Gittings, Philadelphia.

No. 2.

Anemia in Children. D. Hartin Boyd, Pittsburgh.

Discussion opened by Frank A. Evans, Pittsburgh.

No. 3.

Practical Heliotherapy.
William G. Turnbull, Harrisburg.

Outline. Brief review of history and literature. Too much attention attached to theory and not enough to clinical results. History of four years' trial of Rollier system of heliotherapy with selected cases at Cresson Sanatorium. History of four years' trial of modified heliotherapy with all types of ambulatory cases.

No. 4.

X-Ray Studies of the Chest in Infants and Children. (Lantern demonstration.)
Henry K. Pancoast, Philadelphia

Outline. A widely different problem is presented in the examination of the chest of the infant and the child of several years of age. The appearances are quite different and the difficulties to be encountered in the examination vary considerably. The interpretation of findings must be based upon a thorough knowledge of normal appearances and variations within normal limits, especially in the appearance of roots and trunk shadows. The necessary technic will be discussed in each instance. Particular attention is to be given to the appearance of acute respiratory infections as they may alter the appearance of the lungs and the tracheobronchial lymph glands, to pneumonia, tuberculosis and all complications arising from these conditions. The question of thymic enlargements and tumors will be discussed also.

Discussion opened by Willis F. Manges, Philadelphia.

No. 5.

The Interrelationship Between the Health and Social Welfare of Children.
Ellen C. Potter, Harrisburg.

Discussion opened by Howard C. Carpenter, Philadelphia.

No. 6.

Jaundice of the Newborn.
Adam C. Williamson, Pittsburgh.

Outline. Jaundice of the newborn is probably a combination of liver function and blood destruction. There seems to exist a definite relationship between the iron content of placenta and the appearance of jaundice; as a definite iron level in the placenta is passed, jaundice appears. There is apparently no relationship as far as weight or maturity of fetus is concerned. The bilirubin in the fetal blood stream bears a definite relationship to the placental iron content and also is apparently quite independent of the maternal blood stream. Bilirubin may be present in sufficient amounts to disturb the infant Wassermann reaction giving an anticomplementary reaction when no clinical jaundice is present. The Van den Bergh reaction seems to point to the jaundice as being of a hemoptic type rather than hepatogenous.

Discussion opened by Henry T. Price and Percival J. Eaton, Pittsburgh.

Wednesday, October 3, 2 P. M.

No. 7.

Essentials of a Neurologic Examination in Children.
Frederick H. Leavitt, Philadelphia.

Outline. The majority of neurological conditions in children are a result of hereditary or congenital defects. During the period of infancy and early childhood the central nervous system undergoes marked growth and metamorphosis, and as a consequence, neurological signs and symptoms vary considerably in their significance and importance at different ages. The significance of the Babinski reaction in infants is a case in point. In a series of 100 newborn healthy infants examined at the Children's Hospital in Philadelphia, it was observed that about 50 per cent would give a positive Babinski reflex. The purpose of this paper is to bring before the general practitioner and the pediatrician the essential signs and symptoms indicative of various neurological conditions and the importance that may be attached to them at the various stages in the development of the child.

No. 8.

Essentials of a Psychiatric Examination in Children.
Edward A. Strecker, Philadelphia.

Outline. Close relationship between pediatrics and neuropsychiatry. Similarity of problems and points of contact. Neuropsychiatrical conditions in children are strictly within the province of the pediatrist. Inadequacy of older methods. Accurate diagnosis depends on thorough and intensive examination. Scope of this examination—history, physical, neurological, mental, psychometric. As a result of these investigations certain major problems are delineated (mental deficiency, mental retardation, psychoses, psychoneuroses, epilepsy) and there remains a minor but important group including "nervousness," malbehaviour, precociousness, juvenile delinquency, etc. These major and minor diagnostic classes are arrived at most satisfactorily by diagnosis by exclusion. The mere placing of a child in one of these groups does not constitute a proper diagnosis. The diagnosis must often be manifold and include physical, neurological, psychiatric, psychometric, environmental and social factors. Illustrations: This kind of diagonsis is not an academic consideration, but a very practical one on which hinges successful treatment; therefore, all the causative factors must be apprehended. Minimum neuropsychiatric requirement for the modern pediatrist. His opportunity in the field of prevention (mental hygiene of childhood).

Discussion of both papers opened by Charles W. Burr and Edward A. Strecker, Philadelphia.

No. 9.

The Physician's Opportunity in the Prevention of Disease in Childhood.
Howard C. Carpenter, Philadelphia.

Outline. Preventive medicine applied to infancy and childhood in private practice and in hospitals. The training of the physician for this type of work and the equipment required. What results may be expected.

Discussion opened by William N. Bradley, Philadelphia.

No. 10.

The Rôle of Ultraviolet Rays in Rickets. (Lantern demonstration.) (20 minutes.)
Alfred F. Hess, New York City. (By invitation.)

Outline. Consideration of the radiations which are effective and those which are ineffective; of the various artificial sources of radiation that may be employed; of the effect of irradiation on the calcium and phosphorus of the blood; of the importance of sunshine in relation to rickets, and of the variation of the solar rays at different times of the year in various countries. The question of dietetic and climatic factors in their relation to rickets will also be considered.

Discussion opened by Henry T. Price, Pittsburgh.

No. 11.

Intradermal Vaccination.
Daniel E. Berney, Scranton.

Outline. Dilution of the vaccine. Method of intradermal injection. Necessity of having a perfectly dry needle in order to avoid external vaccination. Skin reaction at various periods following the procedure. Advantage of this method. Avoidance of mixed infections. No dressing required.

Discussion opened by Jesse L. Amshell, Pittsburgh. (Guest.)

No. 12.

Cystinuria. Report of Case.
Henry C. Flood, Pittsburgh.

Discussion opened by Roy R. Snowden, Pittsburgh.

Thursday, October 4, 9 A. M.

No. 13.

Acute Otitis Media and Mastoid Involvement.
James I. McLallen, Pittsburgh.

Outline. 1. Anatomy of temporal bone in small children. 2. Etiology—(a) contagious diseases; (b) influenza with other infections; (c) adenoids. 3. Pathology. 4. Preventive treatment—(a) free drainage of middle ear, irrigation and rest in bed. 5. Operative treatment—(a) mastoidectomy.

Discussion opened by Percival J. Eaton, Pittsburgh.

No. 14.

The Common Diseases of the Skin in Childhood. (Lantern demonstration.)
Frank C. Knowles, Philadelphia.

Outline. Scabies, pediculosis corporis, impetigo contagiosa, papular urticaria and the various types of ringworm.

Discussion opened by William H. Guy, Pittsburgh.

No. 15.

Clinical Aspects of Congenital Syphilis. (By invitation.) (20 minutes.)
Royal S. Haynes, New York City.

No. 16.

Mechanism of Infection, Immunity and Diagnostic Reactions in Congenital Syphilis.
John A. Kolmer, Philadelphia.

Discussion of both papers opened by Jay F. Schamberg, Philadelphia.

No. 17.

Mongolian Idiocy. Report of Two Cases in the Same Family. Zaccheus R. Scott, Pittsburgh.

Outline. Theories advanced to explain cause of Mongolism. Frequency of Mongolism. Report of cases. A rare occurrence in the same family. Points of differential diagnosis, etc.

No. 18.

Tonsillectomies from the Standpoint of the Pediatrician. J. Claxton Gittings, Philadelphia.
A. Graeme Mitchell, Philadelphia.

Outline. Preliminary report upon the study of 500 children upon whom tonsillectomy and adenoidectomy have been performed. Physical condition before and after operation with special reference to heart and kidneys.

PROGRAM OF CLINICS

TO BE HELD IN PITTSBURGH DURING THE MEETING OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, OCTOBER 1 AND 5, 1923

Monday, October 1st

9:00 A. M. to 1:00 P. M.

ALLEGHENY GENERAL HOSPITAL

Subject: Traumatic Head Surgery

Discussion and presentation of cases by:

Otto C. Gaub, M.D., of the Allegheny General Hospital.

Paul R. Seiber, M.D., of the Mercy Hospital.
E. W. Meredith, M.D., of the St. Francis Hospital.
L. H. Landon, M.D., of the West Penn Hospital.
E. W. Day, M.D., of the Eye and Ear Hospital.

Roentgenologist:

W. R. Ray, M.D., of the Allegheny General Hospital.

Neurologists:

W. H. Mayer, M.D., of the Allegheny General Hospital.

C. C. Wholey, M.D., of the West Penn and St Francis Hospitals.

Max H. Weinberg, M.D., of the West Penn Hospital.

9:00 A. M. to 1:00 P. M.

MERCY HOSPITAL

Subject: Traumatic Surgery of Extremities

Discussion and presentation of cases by:

H. H. Donaldson, M.D., of the Mercy Hospital.

G. C. Weil, M.D., of the Mercy Hospital.

J. Huber Wagner, M.D., of the St. Francis Hospital.

R. H. McGuire, M.D., of the South Side Hospital.

G. F. Berg, M.D., of the St. John's Hospital.

R. J. Behan, M.D., of the St. Joseph's Hospital.

R. W. Entweisle, M.D., of the St. Margaret's Hospital.

M. C. Slocum, M.D., of the Pittsburgh Hospital.

John Alexander, M.D., of the Allegheny General Hospital.

2:00 P. M. to 4:00 P. M.

WEST PENN HOSPITAL

Subject: Goiter

Diagnosis of Goiter: R. T. Hood, M.D., of the West Penn Hospital.

The Mental and Nervous Symptoms in Goiter: W. K. Walker, M.D., of the West Penn Hospital.

Preoperative Care of the Toxic Goiter Patients: J. A. Lichty, of the Mercy Hospital.

Surgical Treatment of Goiter: Acheson Stewart, M.D., of the West Penn Hospital.

Operative and Postoperative Complications of Goiter Patients: Merle R. Hoon, of the Presbyterian Hospital.

Metabolism Tests with Goiter Patients: Frank Bailey, M.D., of the West Penn Hospital.

The Radiotherapy of Goiter: Geo. W. Grier, M.D., of the Passavant Hospital.

Evolution of Goiter as Seen in Western Pennsylvania: Jos. H. Barach, M.D., of the Presbyterian Hospital.

E. E. Mayer, Chairman;
Merle R. Hoon, Sub-Chairman.

MERCY HOSPITAL

9 A. M.-10 A. M.—Diseases of the Gall Bladder, Drs. Lichty and Fetter.

10 A. M.-11 A. M.—Diseases of the Kidney, Drs. MacLachlan and Pollack.

11 A. M.-12 Noon—Diseases of the Pleuræ, Drs. Moyer and Frost.

12 Noon-1 P. M.—Pernicious Anemia, Drs. Wright and Zur Horst.

Friday, October 5th

9:00 A. M. to 1:00 P. M.

MERCY HOSPITAL

Subject: Traumatic Surgery of Spinal Cord and Back

Discussion and presentation of cases by:

James O. Wallace, M.D., of the Mercy Hospital.
E. B. Fiske, M.D., of the West Penn Hospital.
W. H. Robinson, M.D., of the South Side Hospital.
Paul Steele, M.D., of the Allegheny General Hospital.
C. C. Yount, M.D., of the St. Francis Hospital.
J. P. Griffith, M.D., of the Mercy Hospital.
Edward McCague, M.D., of the Mercy Hospital.
G. W. Grier, M.D., of the St. John's and Presbyterian Hospitals.
Ralph Robinson, M.D., of the St. Francis Hospital.
John McCullough, M.D., of the St. Francis Hospital.
G. W. Wright, M.D., of the Mercy and St. Francis Hospitals.
G. W. Smeltz, M.D., of the St. Francis Hospital.

THE
MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLES

SOME FACTS IN REGARD TO THE X-RAY STUDY OF THE GASTRO-INTESTINAL TRACT*

BY G. C. McELFATRICK, M.D.
WILMINGTON, DELAWARE

In presenting this paper on rœntgenological studies of the gastro-intestinal tract, I hope to be able to show the value of this study in aiding and confirming the diagnosis rendered by the physician sending these cases.

Rœntgen ray study of the gastro-intestinal is not the last word in making the diagnosis of disease of the gastro-intestinal tract, and indeed to be of any value, it takes great pains, labor and skilled interpretation.

A certain number of both physicians and lay people have an idea that when you cannot find the cause of chronic ailment, all you have to do is to consult the x-ray department and they turn on some magic light, so that when a plate is taken of a certain organ, the name of the disease is printed in large letters, and your diagnosis is complete. But far from that!

The interpretation or study of the normal and pathological conditions that arise from the mouth to the rectum, puzzle the rœntgenologist as much as the man who referred the case. In any advanced pathological condition of any organ perhaps it is plain enough to make a diagnosis, but in the beginning and borderline cases, there is need for careful examination and study. In ulcer of the stomach for instance, you may be able to see your ulcer very well, but in others no evidence of the true ulcer is found. You have, then, your direct and indirect signs to guide you.

In your indirect signs, you have a hypermotility and hyperperistalsis and a rapid emptying of the stomach which is suggestive of an ulcer. But still you have no proof that you can show. Also other pathological conditions, as carcinoma, may give you this very same sign.

Great work has been done with the x-ray studies of the stomach and intestines, but they are in the hands of men who have every coöperation of the physician in charge of large hospital services, where internists and surgeons coöperate and help in making a positive diagnosis before operation.

But God help the rœntgenologist who has to go along and make interpretations without any history or help from the physician who refers the case. Many errors and wrong diagnoses, with bad results and operative findings will be contrary to the x-ray findings. But with good team work there should be nearly 100% diagnosis made with the x-ray study, which would correspond with the operative findings.

Over 50% of gastro-intestinal studies sent and examined in the past two years for stomach symptoms were found in either gall bladder or small or large intestines. It is surprising to see very few pathological conditions of the so-called stomach symptoms, and if the stomach were the only organ studied, in 50% of the cases reports and interpretations would be negative.

So that being the experience, it means that the stomach should not be the only organ x-rayed, but that we should go further, through the intestinal tract. We have found an old chronic posterior retrocecal appendix the cause of the stomach symptoms, kinked, long, narrow curled, adherent—veils, bands and adhesion in this region, all the cause of the stomach symptoms, though the patient was giving no other symptoms but pain, eructation of gas, heartburn, water brash, vomiting and nausea, which would lead you to consider the stomach surely, and these are the cases that you will fall down on in your correct diagnosis.

I hope to illustrate this 50% of trouble beyond the pylorus by lantern slides that I will show later and impress the fact that a study should be made of all the tract rather than of any one organ only.

Even if the x-ray findings are negative, there is no positive proof that the patient has no cause for his trouble. In a recent paper on "Physiologic Standards in Gastro-Enterology," by Dr. Horace W. Soper, New York, *American Medical Journal,* September 2, 1922, page 781, the author adds emphasis to the rôle that motor disturbances play in the production of gastro-intestinal symptomatology.

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* Read before the Medical Society of Delaware, Dover, October 9, 1922.

Most investigators agree with Carlson that the pain in gastric and duodenal ulcer is largely, if not entirely, due to motor phenomena, and in his paper he reports a large percentage of patients who presented themselves for treatment of constipation who in reality exhibited no colonic stasis but were suffering from the effects of the habitual use of cathartics and enemas. To restore normal function in these patients it was necessary only to permit the intact colonic mechanism to perform its work, unimpeded by drugs or enemas.

In another recent paper on "The Value and Limitations of Rœntgen Ray Diagnosis in Digestive Disease," by Dr. Ernest H. Gaither, Baltimore, the author outlines:

1st: Cases in which diagnosis could not be made without rœntgen ray.

2d: Cases in which the rœntgen ray is merely confirmatory.

3d: Cases in which the diagnosis cannot be made by the rœntgen ray, but can be made by a careful history and clinical investigation.

4th: Cases that have been incorrectly diagnosed by the rœntgen ray, as shown by their subsequent history.

In the discussion of this paper, Dr. R. Walter Mills, St. Louis, says gastro-intestinal rœntgen ray work is a highly skilled and difficult art so far attained by but a few who have had the advantage of large material. Rœntgen ray work can become so accurate as to be pernicious in its influence.

So you see teamwork should be the slogan in this work. At the Delaware Hospital the surgeons have coöperated with the x-ray department and notice is given that patients x-rayed for gastro-intestinal studies will be operated on such and such a date, and an invitation extended to the rœntgenologist to be present at the operation to confirm or disagree with his findings. In this way, errors can be seen and shown.

The purpose of this paper is not to discuss any particular disease of the gastro-intestinal tract, but to try to help in making an earlier diagnosis, so as to get the disease before it is inoperable, and also to determine definitely the location of the pathological lesion.

Diagnosis has been made of ulcer or carcinoma of the intestinal tract before x-ray study; but the rœntgen ray study will show the exact location of the disease (which gives the surgeon more light on what part he is going to operate), and also, from the appearance of the pathological condition or upon the involvement, whether it would be wise to operate or let it alone. So, therefore, I make a plea for an early study of any gastro-intestinal disturbance. Why treat a patient for a year for indigestion, gastritis, etc., and get no results, then have an x-ray taken and find gall-stones or kidney stones? These are the cases where the rœntgen ray findings are positive; and with the advanced technique and improved tubes and accessories, the rœntgen ray brings to light many obscure pathological conditions which would be overlooked otherwise.

Certainly a physician may know his patient has a fractured bone of the forearm, or an ulcer of the stomach, but to see this condition is impossible, and to see the same diagnosis confirmed by an x-ray plate reveals more than you have diagnosed. It gives the position and extent of the fracture, and gives the location of the ulcer.

Following this, fifty slides of diseases of the gastro-intestinal tract will be shown.

X-RAY OF THE URINARY TRACT*

BY IRA BURNS, M.D.

WILMINGTON, DELAWARE

It is unnecessary at the present day to discuss the obvious value and importance of the x-ray examination of the urinary tract. It is sufficient to state that it is the best and only single method of demonstrating the presence of calculus, also its location, its size and its shape, and of telling the number, if more than one are present. For this reason it is a very valuable aid in the decision whether operative procedure is necessary or an expectant course is permissible. In the latter event it is the only means at our disposal which tells us whether the calculus is passing down or remaining stationary, whether it increases in size, and whether there is a tendency towards the formation of additional calculi.

Besides establishing the presence or absence of calculi, the modern rœntgenologist should be equipped with a Potter-Buckey diaphragm, which is of the greatest mechanical assistance for giving us invaluable information as to the size, location and motility, if any, of the kidneys proper. This device, when proper technique is used, brings out soft parts, particularly the kidney, and also the bony structure of the spine and pelvis, with clear detail heretofore almost impossible to show satisfactorily. Particularly is this true in obese patients.

With kidney outline shown with such distinctness as it should now be shown it is reasonable to suppose that an exceedingly small percentage of calculi should escape detection. Some rœntgenologists use this device with almost every exposure.

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* Read before the Medical Society of Delaware, Dover, October 9, 1922.

For the diagnosis of movable kidney I believe the apparatus should be so arranged as to make radiographs of patients in a horizontal or perhaps moderate Trendelenburg position, and then in a standing position. With patient lying horizontally on the table, nephroptosis causing great distress, may be overlooked, just as the most marked gastroptosis will escape observation unless the patient is examined in a standing position.

I have adopted as a routine, in cases referred for size, shape and position of the kidney, of making an exposure with the patient in a horizontal position followed immediately, with my attachment so arranged as to tilt the table, and make one with patient in standing position. It occurred to me that this means of comparison would be the natural technique to obtain this information.

In the majority of cases x-rays are made of the urinary tract to determine the presence or absence of stones or to outline the size, shape and position of the kidney.

For other conditions of the kidneys, however, that cannot be determined readily or at all by such an examination, we may resort to the method of pyelography, that is the demonstration of the renal pelvis and calyces, of the ureter, and of the bladder, by the injection of substances that are opaque to the rays.

I have been exceedingly fortunate in having the coöperation of Dr. V. D. Washburn in this work, who cystoscoped and injected the patients in my office before I made the pyelograms. We believe that we were the first in this state, in October of last year, to make kidney studies by the method of pyelography. In the larger cities, however, particularly in the large clinics connected with teaching institutions, pyelography is almost a daily procedure.

Last week while visiting the rœntgenological work of various hospitals in New York City I was particularly impressed by the advanced urological work done in Mt. Sinai Hospital. Thursday they had twelve cases for x-ray of the urinary tract; many of these were catheterized and injected for pyelography. Their new addition has a sub-department of the x-ray section for urological studies alone.

The principal conditions which may be demonstrated by pyelography are: enlargement of the renal pelvis, such as hydronephrosis and pyonephrosis; malformations of the renal pelvis, most commonly due to tumor of the kidney; cystic kidney, horseshoe kidney, fused kidney; identification of shadows within the kidney outline as extrarenal or intrarenal, constriction or kink in the ureter. Our first case was a stricture of the ureter, which Dr. Washburn advises me was relieved of his symptoms after dilatation.

We not unusually find the origin of some obscure or vague complaint in the urinary tract—perhaps a small calculus in the kidney or ureter previously unsuspected, or possibly a movable kidney kinking the ureter. Urologists of considerable authority claim that ureteral kink is probably one of the most frequent causes of abdominal pain.

Also it has been my experience in cases where the patient's vague complaint suggested disease of the urinary tract that sometimes the pathology was elsewhere. One such case was referred by Dr. J. S. Keyser, of a young woman whose symptoms suggested a kidney or hip joint disease. My exposure, fortunately, covered also the lower lumbar vertebræ, and to our surprise, considerable destruction was found about the fourth and fifth lumbar vertebræ. My diagnosis, of spondylitis, probably of mixed infection, was confirmed by the subsequent history and arrest of the condition.

A similar case was referred by Dr. F. E. Spencer, whose indefinite symptoms suggested some kidney pathology. Dr. Washburn brought the case to my office with the intention of injecting the kidney for pyelograms. Before inserting the catheters, however, I made radiographs and they revealed spondylitis deformans almost identical with that shown in Dr. Keyser's case. This patient's condition also was arrested and all symptoms disappeared with immobilization in a plaster jacket.

The first two slides I shall show are those of normal renal pelves and calyces showing a few different types within perfectly normal limits, just as we have different types of stomachs, etc.

The first case we studied was a male aged 33. The left catheter was readily inserted and passed to the pelvis of the kidney but this could not be done on the right side on account of what proved to be a stricture in the ureter near its entrance to the bladder. The opaque fluid, however, was readily passed up both ureters and filled the pelves and calyces. This fluid was then permitted to flow from each ureter simultaneously. The normal ureter permitted the return flow readily, but the constricted side retarded the flow. The second slide of this case shows the fluid remaining in the pelvis of this kidney while the other is clear of the fluid.

I shall also show slides made of some of my cases with renal and vesical calculi. Also one showing the sodium iodid solution, which was used in making our pyelographies, injecting a perineal-prostatic fistula.

REFERENCES

Pyelography, W. F. Braasch, M.D.
U. S. Army X-Ray Manual.

DISCUSSION

ON PAPERS OF DRS. MC ELFATRICK AND BURNS

Dr. Ira Burns (Wilmington): With reference to Dr. McElfatrick's paper, his pictures are exceptionally good, particularly those of the appendix. With reference to diagnosis, just as Dr. McElfatrick said, the rœntgenologist's diagnosis is not at all final. We hope to make it more and more correct as time goes by. There are some rœntgenologists whose diagnosis is the last word, but there are exceedingly few men who are so capable.

Dr. Wm. V. Marshall (Wilmington): I should like to say a word about physicians being under the impression that just one plate is sufficient to make a diagnosis. It is pretty hard at times to have the patient submit to more. I think our studies here to-night prove to us that oftentimes several x-rays are necessary, so when you send your patients hereafter, do not limit them as to the number of plates unless you have to.

Dr. H. W. Briggs (Wilmington): I wish to emphasize one point brought out by Dr. McElfatrick, that is, the necessity of coöperation, in other words, of team work. In our work at the Delaware Hospital, we do not rely upon one definite thing. No diagnosis is correct until we have a complete report from the x-ray department, from the laboratory, and a complete history of the patient, together with clinical findings on examination. He is perfectly right in saying that more advantage should be given him, and that we should not depend on any rœntgenologist's findings.

Dr. Harold Springer (Wilmington): I want to congratulate these men on their pictures. I am glad to see that they bring out two or three points. Do not depend on the x-ray man and his diagnosis alone. We can be very easily misled, and this is true more positively about abdominal pictures, especially as far as the stomach is concerned.

I believe that a great many people have stomachs low down. This condition that we call chronic appendicitis is not chronic appendicitis —it is adhesions. If you send a patient to a laboratory man, he will show it is chronic appendicitis. In most cases, there is nothing wrong with the appendix, it is tied down with adhesions. I believe that in the large majority of cases of gall-bladder diseases you can find some definite pathology in the right lower quadrant. It is surprising in how many cases you can demonstrate an actual pathological condition about the appendix or the lower end of the ascending colon that produces symptoms which are labeled "fallen stomach." The x-ray study is only one link in the chain, and it is not the most important link.

I want to urge on the medical man in making his diagnosis that he keep these things in mind, and not forget that the average stomach case is not a stomach case. In 1,000 cases of indigestion, 66% were associated with kidney diseases. Out of 1,000 only 11% can be traced to stomach conditions themselves, such as ulcers, cancers, etc. I think that a conservative estimate would be one in twenty where you would get a gall-stone picture by an x-ray. Also I wish to emphasize that there are some cases of so-called "acute indigestion" which are gall-bladder trouble, rather than trouble in the stomach itself. There is another thing that we should remember in gall-stones—the rarity of jaundice. I should not like to say what per cent of gall-stones do not have jaundice.

Dr. J. M. Stadter (Wilmington): During the past year in New York City, the cases which were diagnosed as chronic appendicitis were not operated on before x-ray examinations were made.

Dr. McElfatrick (in closing): We make as many correct diagnoses as we do in general practice, if not more. The idea is that we feel we are a help in locating the disease. One thing I should like to say is this: As Dr. Marshall says, a good many physicians think that one plate is sufficient to tell you everything from mouth to anus. Doctors down state send their patients for gastro-intestinal examinations, and they come to my office expecting to get the afternoon Delaware Road train back home. Remember it takes from two to three days to make a complete, thorough examination of the intestinal tract, and the x-ray man cannot do it for five dollars.

EDITORIALS

WHAT WILL THEY DO?

This question is now on the lips of every physician in Delaware, and refers to the newly appointed Commission of Public Health and Welfare. This Commission was appointed recently by Governor Denny, pursuant to the Act of the Legislature of 1923, which provided for the amalgamation of the Child Welfare Commission, the State Tuberculosis Commission, and the State Board of Health. The story of the battle over this bill is well known. It began some two years before, when it became apparent that the Child Welfare Commission, under the guidance of Dr. French and certain feminist leaders, showed by its actions that it either could not or would not conduct its activities in fairness to the medical profession. The evils grew and grew, till nearly every physician in the state had one or more grievances against the movement; in fact they grew to such a volume that the most ardent apologist for the Commission realized that some changes were inevitable, and soon at that. Sick children were being treated, instead of being referred to their family physician; the bill for drugs in one year was five hundred dollars; patients were admitted regardless of their financial status, simply to increase the number of persons treated and thereby justify an increased appropriation; their nurses were playing favorites and referring cases to those favorites; and worst of all, prescriptions are on file in certain pharmacies written by welfare nurses. When these and other matters were complained of, all that the physicians got from the Commission or its employees were acknowledgments of wrongdoing, and promises for the future. These promises were never fulfilled. The removal of Dr. French did not remedy matters much. Even the laiety began to squirm under some of the antics of the Commission, as was manifested during the Legislature. We did not know till that time just how unpopular this Commission really was. As an example, in the House Mr. Gray had secured twenty votes out of thirty-five to wipe out the Commission entirely. Thus there was good reason to make some change in this work. The tuberculosis work was included in the merger as a matter of financial economy.

Realizing the hopelessness of any reform coming from within the Commission, the Medical Society of Delaware and its constituent societies prepared to take their case to the Legislature. Learning of this, the Commission, together with some other commissions, prepared a bill of their own, and it likewise was presented to the Legislature. Both bills provided for the fusion of the three above-named boards, but differed widely in their medical provisions. The bill as actually signed is a compromise bill, but by a very narrow margin grants the most vital point involved to the physicians, i. e., it provides that the medical profession shall control the medical affairs of the state. This control hangs by a very slender thread, and necessitates the attendance of all four physicians at every meeting, a practically impossible feat, whether the meetings are held in Dover or in Wilmington.

The new Commission consists of one physician from Wilmington, one from each of the three counties, and three lay women, one representing the old child welfare work, one the old tuberculosis work, and one at large. The personnel of the lay section of the Commission had been rather accurately predicted some time before the appointments were announced; the medical personnel was somewhat of a surprise. Some weeks before, Governor Denny requested the medical societies to make nominations for these posts, but so far as we are informed at present, none of those nominated to represent the organized profession were named. We venture the opinion that the Governor would not ignore the nominations of organized labor, or organized suffrage, or any other organization that has an especial right to speak for its constituency. The Governor has given the profession, as an organization, a slap in the face; but he may regret it some day, for should he ever seek other political honors in Delaware, he has been marked already for a thorough knifing, regardless of party. And this is in addition to the animosity engendered by the unsavory Denny-Wolcott-duPont deal.

The medical personnel as actually named has been greeted with mixed approval and disapproval, because of the fact that two of the four physicians named have been more or less actively associated with the child welfare work before. It is unquestionably true that the Governor set out to nullify the intent of the law to grant to medical men the control of the various state medical boards, by appointing the three women required by law, and then adding to their votes two physicians who presumably would play the game with them rather than with the physicians. But judging from the statements made by these two, it is already apparent that they are looking at the question from a much larger viewpoint than that of one bureau only. They seem to realize that they are now responsible for the purely medical work of the whole state government, and as such cannot for one minute play into the hands of any lay group. No vote cast by them can be cast conscientiously unless it be backed up by their whole experience as medical persons. We are personally convinced that, when it comes to the inevitable showdown, these doctors will vote as doctors, and not as partisans to any lay movement, however worthy. We are sure that the entire medical section of the new Commission will function to the satisfaction of the profession. They have many intricate problems to face, many old sores to heal, and many opportunities also. May they make the most of them.

The Commission will determine the policies of the department, and the actual carrying out of these will devolve upon the executive secretary, who, by law, must be a trained sanitarian. There is no such individual in the state at present, though there are several who have had considerable experience in military sanitation. This type of experience may prove sufficient for our local needs, but the law makes it mandatory, and we think rather wisely, that the secretary be a man trained especially in this kind of work. This means that a man will have to be imported, and already we have heard complaints that the local profession is to be ignored in seeking after the proper official. Such complaints are not worthy of our profession. Delaware is a small state, and sometimes stoops to small things, and the people of Delaware exhibit at times a most deplorable provincialism, a smug self-satisfaction that stifles progress; but surely the doctors of Delaware are big enough and broad enough to see that, even though the law did not compel it, the best is none too good for this very important post. The new incumbent *must* possess this special education, which is tantamount to saying that he must possess the degree of doctor of public health. He will almost surely be also a doctor of medicine, for none of the schools of hygiene with which we are familiar admit any but graduates in medicine. This will assure a more sympathetic attitude towards the profession, and we feel sure will go a long way towards eradicating the sore spots that have been engendered in the past. The work of the new Commission will largely stand or fall according to the ability, tact and common sense of the executive secretary.

But the Commission itself will have to stand or fall according to the policies it adopts. It seems anticipatory to make suggestions to them, but as the mouth-piece of the organized profession we implore them to see to it that the evils of the past be avoided, that causes of irritation be removed, that medical problems be solved by medical persons. There was plenty of room for improvement in all three of the bureaus merged; we expect to see these improvements made. We realize that the economy of $100,000 talked about during the Legislature may not be possible, and we realize that with the decreased appropriations available the work starts out handicapped, but intelligence, industry, and integrity will go a long way towards wiping out this handicap.

Delaware expects this Commission to do things, and to do them right. W. E. B.

THE NEW COMMISSION OF HEALTH AND PUBLIC WELFARE

We are not altogether pleased with the way the Governor disregarded the selections of our Medical Society, and we are disappointed in not having on the Commission members of our choice, but all in all, the Governor did well in his appointments.

The predominant influence on the Commission will be the Child Welfare, represented as it is by Mrs. Charles Warner, Dr. Robert E. Ellegood and Dr. Margaret Handy. The obvious inference is that the policies, and to a very large extent, the practices of the old Child Welfare Commission will be carried on.

Child welfare work is here to stay and it behooves us to make this stay profitable to the community. This can be best accomplished by adjusting ourselves to this welfare movement and giving the Commission our whole-hearted coöperation. Captious criticism, petty antagonism and hair-splitting arguments will only belittle the profession, and create bitterness and personal animosities which will hamper the work, and to that extent waste public funds.

The new Commission has a big job on its hands. The activities of the old Tuberculosis Commission, the Child Welfare Commission, and the State Board of Health will be correlated in such a way as to render the work more efficient and economical, to fulfill the object of the merger. It will depend to a great extent on the kind of executive secretary the Commission will select. Delaware is a small state and has very little money to spend, and that little must go a long way. Let us all work together to make the activities of the new Commission as efficient as they can possibly be made. A. R.

PERSONALS

Dr. J. Keyser, of Wilmington, is leaving for Europe for an indefinite stay, to take up obstetrics and gynecology. He will spend most of his time in Berlin and Vienna.

Dr. William H. Speer is now in Europe on a six-weeks' vacation.

BOOKS RECEIVED

The International Medical Annual. A Year Book of Treatment and Practitioner's Index. New York: William Wood and Company. Price $5.00 net.

The Infant and Young Child. Its Care and Feeding from Birth Until School Age. A Manual for Mothers. By John Lovett Morse, M.D., Edwin T. Wyman, M.D., and Louis Webb Hill, M.D., of Harvard Medical School and Children's Hospital, Boston. 12mo of 271 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $1.75 net.

Eleventh Annual Report of the United Fruit Company, Medical Department, 1922. General Offices: Boston, Massachusetts.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery, neurology, pediatrics, obstetrics, gynecology, orthopedics, pathology, dermatology, ophthalmology, otology, rhinology, laryngology, hygiene, and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Volume II. Thirty-third series, 1923. Philadelphia and London: J. B. Lippincott Company.

Teeth, Diet and Health. By Kurt H. Thoma, D.M.D., Assistant Professor of Oral Pathology in Harvard University Dental School. 12mo, 215 pages, illustrated. The Century Co., 353 Fourth Ave., New York City. Price $2.00.

Ceremony of Unveiling of the Memorial to the Service Men of the Allegheny County Medical Society, Thanksgiving Morning, November 30, 1922, at eleven o'clock, Schenley Pork, at Phipps Conservatory, Pittsburgh, Pa.

1922 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1,394 pages, 488 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $13.00 net.

Infection and Resistance. An exposition of the biological phenomena underlying the occurrence of infection and the recovery of the animal body from infectious disease, with a consideration of the principles underlying specific diagnosis and therapeutic measures. By Hans Zinsser, M.D., Professor of Bacteriology and Immunity, Medical School, Harvard University. Third edition. New York: The Macmillan Company, 1923.

BOOK REVIEWS

THE DEBT OF MEDICINE TO THE FINE ARTS, by J. A. Nixon, M.D., F.R.C.P., Bristol, England. Publisher: J. W. Arrowsmith, Ltd., 11 Quay St., Bristol, England. Price 75c net.

This little brochure represents The Presidential Address, delivered at the opening of the Fiftieth Session of the Bristol Medico-Chirurgical Society, October 11, 1922.

Dr. Nixon sustains his argument in logical sequence, proving that the medical profession has been debtor to the fine arts for many centuries. Several prints of anatomical plates, the earliest being 1452-1519, illustrate the Doctor's thesis.

Dr. Leroy Crummer, of Omaha, Nebraska, recently addressed The College of Physicians of Philadelphia on "Early Anatomical Fugitive Sheets," and is now in Italy making further studies along the same line as Dr. Nixon.

To those who are interested in the subject we recommend the brochure as being directly informative and suggestive of lines for further study of this interesting subject. A. C. M.

THE PATIENT'S VIEWPOINT. By Poluel J. Flagg, M.D. The Bruce Publishing Co., Milwaukee, Wisconsin. Price $1.30.

This is an interesting little volume, not because of its merits from an educational point of view, but because it reflects the thoughts, emotions and personality of its author, a physician. It is like spending an evening or two with the doctor and hearing him talk in a personal way about the various perplexing problems encountered during his long professional life. There is little of the "Patient's Viewpoint" in the book, save in a few snatches here and there, but the "Author's Viewpoint" is interesting, even if one does not agree with his theology, or disapproves of the childish fashion in which he handles the theory of evolution.

The chapters "Incense to Mercury," "General Practitioner and Specialist" and "The Physician and the Nurse" are particularly good and show a thorough familiarity with hospital life. We would like to quote extensively from these chapters, but we rather recommend the reading of the book, particularly the very vivid and humane description of the poor children who are having tonsillectomies performed in groups.

Throughout the volume there is a lofty idealism which is refreshing in these days of crass commercialism in the profession. Here and there a touch of fine description and insight into human emotions stamp the author as a writer of no mean ability.

We would like to have the full story of Helen Stiles—it must be interesting. A. R.

CLINICAL ELECTROCARDIOGRAPHY, by Frederick A. Willius, M.D. Section on Clinical Electrocardiography, The Mayo Clinic, Rochester, Minnesota, and The Mayo Foundation, University of Minnesota. Octavo of 188 pages with 185 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $5.00 net.

For those of us who were reared on Lewis' small electrocardiographic primer, there seems little need for the recent flock of booklets which have appeared on the same or kindred subjects. Few new ideas of assured fact are generally added in these works and the old material is usually redone. Of course, we appreciate that publishing houses must prosper and that none of us are guiltless of "pot boiling."

The author of the book in question has done some very admirable work on the clinical side of electrocardiography. The essence of his articles on angina pectoris, T-wave, negativity, prognosis from the electrocardiographic standpoint, etc., is included in this book. We have read with intense interest his contributions to the journal literature as they have appeared, and they merit our heartiest congratulations. They are worth while. Why they need the additional medium of a book for dissemination, we can only surmise.

We see no advantage in changing the classification of abnormal cardiac mechanisms, in spite of the arguments presented. Perhaps we do not like iconoclasts. The author could not well expect a beginner to operate an electrocardiograph by following the included directions. Perhaps he has no idea that they could serve the beginner in this way. Then too, we have recently seen such excellent electrocardiograms, from the technical standpoint, appearing in the literature, that we cannot compliment the author on some of his curves as the printer has reproduced them. They are, nevertheless, an interesting group of tracings, even though some of them are susceptible of interpretations other than those set down for them, and some of them are undoubtedly by oversight incorrectly legended. These criticisms are, by no means, destructive. We doubt whether anyone else attempting a book on similar lines could do better. The author's own contributions to electrocardiographic literature are most noteworthy. He has worked with a wealth of material and he has utilized it to splendid advantage. T. G. S.

RULES FOR RECOVERY FROM PULMONARY TUBERCULOSIS. A Layman's Handbook of Treatment. By Lawrason Brown, M.D. Fourth Edition, Thoroughly Revised. Lea and Febiger, Philadelphia and New York. Price $1.50.

There is no other chronic disease in which the outcome of the treatment depends so much on the absolute coöperation of the patient as is the case with tuberculosis, and this coöperation cannot be secured unless the patient has a thorough understanding of his disease and what is expected of him. He must, for a time at least, recast his whole life and adjust himself to a regimen requiring an unusual degree of self-discipline. The physician has not the time, and in many instances the knowledge, to instruct his tuberculous patient, and he can do no better than place one of these little books in his patient's hands, with the admonition to study it carefully.

The author, a disciple of the great Trudeau and a foremost specialist, who has himself gone through the fight, has presented in a tense and lucid manner the known facts about the management of tuberculosis, and the reason for the rules to be observed. The treatment of tuberculosis has undergone a decided change within the last few years. Where the emphasis used to be placed on forced feeding and fresh air, rest is now regarded as the most essential factor. As Dr. Brown points out, rest, good food, fresh air and education are the Alpha and Omega of modern treatment. Yet, in the experience of those who have to deal with a large number of consumptives there is still another important factor which determines to a large extent the ultimate issue, namely, the patient's psyche. His mental attitude towards his illness; the extent to which he succeeds in making his family, social and economic adjustments; the control which he must exercise in changing fixed habits; his ability to suppress desires and urges without creating serious conflicts; the difficulties frequently introduced into the situation by peculiarities of temperament—all these factors creep in and render the management of the given case extremely difficult. How often does one see the grouchy, dissatisfied, restless, impatient consumptive succumb to the disease, despite the best medical treatment. This is the individual who changes physicians, goes from one sanatorium to another, makes long pilgrimages to "climates"; in short, "chases the cure," only to find grim death waiting at the end of the chase. Of these and to these, Dr. Brown cay say a great deal, and we hope he will do so in the next edition of his handbook.

It is to be equally regretted that the author passes over with contemptuous silence the use of drugs in the treatment of tuberculosis. It is true that the book is written for laymen, and there is always the danger of self-medication; it is equally true that there are practically no drugs which are more than "placebos" in the treatment of consumption. Yet, even the intelligent layman still clings to the belief in the efficacy of drugs, and he will regard with distrust a physician who does not prescribe "something." It would help the conscientious physician a good deal if a book of this type contained the reasons for our apparent therapeutic "nihilism" when it concerns the treatment of tuberculosis. In this connection, a brief discussion of the patent medicines and other fake consumption cures would not be amiss.

However, it is merely a difference of opinion as to what should be included in a book for laymen. The reviewer does not wish to create the impression that the omissions mentioned detract seriously from the value of the book, particularly since an exceptionally good bibliography is appended and thus opportunity afforded to gain the information elsewhere. A. R.

LEGAL MEDICINE AND TOXICOLOGY. By many specialists. Edited by Frederick Peterson, M.D., Manager Craig Colony for Epileptics; Walter S. Haines, M.D., late Professor of Chemistry, Materia Medica and Toxicology, Rush Medical College; and Ralph W. Webster, M.D., Assistant Professor of Medical Jurisprudence, Rush Medical College. Second Edition. Two octavo volumes, totalling 2268 pages, with 334 illustrations, including 10 insets in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $20.00 net.

Every article of the former edition has been thoroughly revised or entirely rewritten and brought up to the present-day knowledge of the subject treated. The group of authors who have contributed to this excellent work are leaders in the subjects on which they have so skillfully written.

The work is divided for convenience of reference into two sections, Part I and Part II, the latter being devoted to Toxicology and other portions to Legal Medicine in which laboratory investigation is an essential feature.

The first volume is divided into 33 chapters, contains 1196 pages. The subjects treated are Legal Rights and Obligations of Physicians; Identification of the Living; Identity; The Signs of Death; Sudden Death; Death from Cold, Heat and Starvation; Death and Injuries by Lightning and Electricity; Wounds; Gunshot Wounds; Burns and Scalds; Railway Injuries; Injuries and Disorders of the Nervous System Following Railway and Allied Accidents; Speech Disorders; Inebriety; The Stigmata or Degeneration; Mental Disorders in Medicolegal Relations; Mental Defect Group; Mental Perversions of the Sexual Instinct; Malingering and the Feigned Disorders; Summaries of State Laws Relating to the Insane; The Legal Aspects of Pregnancy; Legitimacy—The Determination of Sex-Signs of Delivery; Birth and Legitimacy; Abortion; Infanticide; Impotence and Sterility; Rape; Unnatural Sexual Offenses; Marriage and Divorce; The Medicolegal Aspects of Vision and Audition; The Medicolegal Relations of Venereal and Genito-Urinary Disorders; The Medical Jurisprudence of Life Insurance; The Medical Jurisprudence of Accident Insurance.

All of these articles have been well written and convey to you in a clear manner the essentials of the subject under consideration. The subjects are those with which the average physician should be more familiar and the clearness of the text will appeal to the average physician.

Volume II, as previously stated, is devoted to Toxicology. It treats of the following subjects: General Principles of Toxicology; Forensic Questions Relative to Poisoning; The Technic of Medicolegal Postmortem Examinations; Inorganic Poisons; Gaseous Poisons; Death from Asphyxia; Alkaloidal Poisons; Non-Alkaloidal Organic Poisons; Industrial Toxicology; Food Poisoning and Food-Borne Infections; Poisonous Mushrooms; Poisonous Proteins; Postmortem Imbibition of Poisons: The Destruction and Attempted Destruction of the Human Body by Fire and Chemicals; Death from Pounded Glass and Other Mechanical Irritants; Medicolegal Examination of Blood and Blood-Stains: Medicolegal Examination of Seminal Stains; Medicolegal Examination of Hairs; Medicolegal Relations of the X-Rays, Redium and Ultra-Violet Rays; The Common Law and Statutory Obligations of Pharmacists.

This volume contains a mass of valuable information which is of help not only to the specialist but to the general practitioner and student. Furthermore, this work has been produced by men who are likewise experts in their lines and is written in as attractive a manner as it is possible to present these difficult subjects.

The reviewer congratulates the authors and their associates on the publication of these two extremely well prepared volumes. F. F. D. R.

PROPAGANDA FOR REFORM

The Intracardiac Injection of Epinephrin.—Recently much publicity has been given to the power of epinephrin, when injected into the heart, to produce a response resulting in revivification when the heart has apparently ceased its action from certain causes. Of the many cases which have been reported, a remarkable one is that in which collapse occurred during an examination for extra-uterine pregnancy. After other methods had been tried withaut avail, an intracardiac injection of epinephrin was given. In ten seconds the heart sounds became perceptible. Four weeks later the patient was discharged as well. It must be borne in mind that the instances in which such restoration can be utilized are rare. When death comes as the result of the wearing away of tissues, as the result of toxic action of either bacterial or metallic poisons, or as the result of destruction of vital organs, it would be cruel and futile to arouse false hopes by what could only be a sensational experiment. (*Jour. A. M. A.*, May 5, 1923, p. 1314.)

INTRAVENOUS THERAPY.—For some years the Council on Pharmacy and Chemistry has urged conservatism in the adoption of the intravenous method of administering drugs. It has been necessary to do this to offset the propaganda of proprietary firms that, for commercial purposes, feature the indiscriminate use of intravenous therapy. In order that the status of this form of drug administration might be presented to the profession, and that it might be made clear under just what conditions the intravenous administration of drugs is warranted, the Council publishes a report prepared by a committee which studied the problems involved. The report discusses the fallacy of the arguments commonly advanced by those who advocate intravenous therapy as a routine. The Council has no desire to discredit the rational use of drugs by intravenous injection, but, on the contrary, it seeks to avoid the accidents and disappointments that must follow the abuse of a method which, rightly employed, may be a life-saving measure. The Council places itself on record as opposing the reckless and indiscriminate use of drugs by intravenous injection with its attendant dangers and increased needless expense to the patient. However, the Council recognizes the legitimate, life-saving nature of the intravenous administration of drugs in extreme cases. (*Jour. A. M. A.*, May 5, 1923, p. 1331.)

ETHYLENE AND ACETYLENE.—There is a revival of interest in two gas anesthetics: ethylene and acetylene. Both gases were the subject of experiment in anesthesia many years ago. The studies of A. B. Luckhardt and J. B. Carter and of W. E. Brown with ethylene confirm the earlier experiences and hold out promise of the usefulness of the gas. In the recent experiments with acetylene the objectionable odor of the gas has been overcome by the addition of oil of pine. A mixture of acetylene, 40 parts, and oxygen, 60 parts, flavored with oil of pine, has been used in major operations. The advantages claimed for acetylene are: rapid induction; simplicity of administration; safety; absence of struggling and excitement, and rapid recovery. Both ethylene and acetylene are asphyxiants. Their usefulness in relation to that of nitrous oxid, and also to ether, remains to be demonstrated. (*Jour. A. M. A.*, May 12, 1923, p. 1383.)

FLEISCHMANN'S YEAST NOT ADMITTED TO N. N. R.—In March, 1921, the Council on Pharmacy and Chemistry took up the consideration of Fleischmann's Yeast on account of the extensive and extreme therapeutic claims which were made for this preparation. Since then the Council has given much attention to the subject of yeast therapy. After consulting with eminent students of nutrition and clinicians qualified to speak with authority on questions of nutrition, dietotherapy and pediatrics, the Council concluded that there was little likelihood that the administration of yeast or yeast preparations will be of therapeutic value in many cases for which they are advised. The Council finds that many advertisements for Fleischmann's Yeast are misleading in that they tend to create the belief that many diseases are prevented or cured by its use. Advertisements addressed to physicians are likely to lead to the belief that the efficacy of yeast therapy in many conditions has been established. Advertisements addressed to the public are bound to create the opinion in the mind of the lay reader that reliance may be placed on yeast in many conditions. The Council refused recognition to Fleischmann's Yeast (1) because it is advertised by means of unwarranted and misleading therapeutic claims, and (2) because it is advertised to the public with unwarranted therapeutic claims that may become a detriment to the public health. (*Jour. A. M. A.*, May 12, 1923, p. 1398.)

THE STANDARDIZATION OF PITUITARY EXTRACT.—Pituitary extract—a solution containing the water soluble principle or principles from the fresh posterior lobe of the pituitary body of cattle—is official in the U. S. Pharmacopeia as Solution of Hypophysis, and a method of standardization is prescribed. In practice the pharmacopeial standard has been found unreliable and manufacturers have adopted various modifications. Further, the pharmacopeial solution has been found too weak, and stronger preparations are being marketed. Some of these have been accepted for *New and Nonofficial Remedies*. The wide variation in the strength of pituitary extracts and the unsatisfactory character of pharmacopeial assay method are shown in a study carried out by Erwin E. Nelson, and a study by Morris I. Smith and Wm. D. McKlosky. The next pharmacopeia should provide a pituitary solution of satisfactory strength and an assay method which will insure a satisfactory control of this important medicament. Until such a standardization is provided, the physician will do well to use one of the pituitary preparations accepted for *New and Nonofficial Remedies*, which he has found to be satisfactory. (*Jour. A. M. A.*, May 19, 1923, p. 1473.)

TRYPARSAMIDE.—The Council on Pharmacy and Chemistry publishes a preliminary report on the experimental status of Tryparsamide. The drug is an arsenical developed in the Rockefeller Institute for Medical Research. Pending the outcome of clinical studies, the substance is not offered for sale. Tryparsamide is primarily a trypanocidal agent, but it possesses some spirocheticidal activity. It is said to produce "tonic" effects. It is proposed for use in the treatment of trypanosomiasis, syphilis of the central nervous system and late stages of syphilis with inactive or indolent lesions, and it is said to be specially indicated in the treatment of cachectic individuals. The Council states that the favorable reports of the effect of Tryparsamide on trypanosomiasis and neurosyphilis appear to warrant controlled trials of the drug in these conditions, but also warns that the possibility of harm to vision must be given due consideration. The Council postponed the acceptance of Tryparsamide for *New and Nonofficial Remedies* until its therapeutic value and safety are established, and until it is on the market. (*Jour. A. M. A.*, May 26, 1923, p. 1521.)

FIBROFORM AND THE NOLAN INHALER.—"A cure for pulmonary tuberculosis by the use of pure carbon and calcium was claimed by Dr. Wm. T. Nolan of Jeannette, Pa., in an address before the Westmoreland County Medical Society in Greensburg, Pa." This was the first paragraph of a news story sent out by the Associated Press. The treatment, it seems, consists of the inhalation of a fine powder said to be made by mixing soot with calcium carbonate, phosphate, chloride and lactate. This, Dr. Nolan calls "Fibroform." Fibroform is used by means of the Nolan Inhaler. The outfit appears to be supplied by Dr. Nolan for one hundred dollars. As no quantities are given, the composition of this latest "consumption cure" is secret. The treatment is put forward on the basis of utterly inadequate tests made only by its sponsor. (*Jour. A. M. A.*, May 26, 1923, p. 1535.)

Afsal.—Afsal is being marketed by S. Lewis Summers. It is stated to be "diacetyl methylene disalicylic acid." The product was formerly marketed by the Organic Chemical Manufacturing Co. (S. Lewis Summers, president) as Urasol. Urasol was one of a number of the "Forma-Sol Compounds" marketed by the Organic Chemical Manufacturing Company and stated to be compounds of methylene-disalicylic acid. Sollmann reported in 1908 in an investigation made for the Council on Pharmacy and Chemistry that he had been unable to confirm the claims that were made for these compounds. A subsequent examination confirmed Sollmann's findings. (*Jour. A. M. A.*, Sept. 7, 1922, p. 1264.)

Spahlinger's Treatment for Tuberculosis.—Spahlinger, according to reports, was a lawyer who abandoned his profession for research work. He appears now to be connected with the Bacterio-Therapeutic Institute, Geneva. According to an article by Spahlinger, the treatment utilized either one or both of two therapeutic principles depending on the nature of the infection. In acute cases, passive immunization with special serums is used. In chronic afebrile pulmonary cases, in non-pulmonary, and in cases "predisposed to" tuberculosis, active immunization with special antigens is employed. No definite information in regard to the preparation of the product is given. Reports that the British Red Cross is to purchase the treatment are unconfirmed. Reports that the Rockefeller Institute had made an offer to secure the rights for the product in the U. S. proved unfounded. The exact nature of the Spahlinger treatment does not appear to have been divulged, the treatment is in the experimental stage and the reported results lack confirmation. (*Jour. A. M. A.*, Oct. 7, 1923, p. 1264.)

Radioactivity of Waters.—Twenty-five years ago various mineral springs and waters were claimed to have therapeutic virtues because of their lithium content. To-day we know that the amount of lithium in natural waters is insignificant, and that lithium is of no therapeutic value anyway. At the present time, many mineral waters are exploited because of their asserted content of radium. However, the rationale of the internal administration of radium is being doubted. Also, relative traces of radioactive substances are practically valueless and the Council on Pharmacy and Chemistry will not accept any radium solution for internal use the dosage of which is less than two micrograms each day or any radium emanation generator which yields less than two microcuries emanation each twenty-four hours. The probable value of radioactive mineral waters may be judged when it is known that it would be necessary to consume 2,810 gallons daily of the water yielding the largest quantity of temporary radioactivity in order to obtain the minimum therapeutic dose of two microcuries emanation and that the best water available as regards radium content would require the administration of 1,957 gallons per day in order to obtain 2 micrograms of radium. (*Jour. A. M. A.*, Oct. 14, 1922, p. 1339.)

The Clinical Field of Yeast Preparations.—In March, 1921, the Council on Pharmacy and Chemistry requested its Committee on Therapeutic Research to determine the advisability of undertaking a clinical study of the usefulness in therapy of yeast preparations. Accordingly the chairman of that committee drew up a provisional plan which proposed to utilize the easily observable phenomena of growth, appetite and laxative effect as cumulative indices of all actions and to record this under a variety of normal and pathologic conditions. The plan was submitted to the committee and to others for an opinion. In consideration of the replies received and the unfavorable results published by A. L. Daniels and by A. F. Hess the chairman of the committee recommended that the study be not inaugurated. The chairman reported that he had come to these conclusions: 1. Apart from the occasional imported cases of beriberi, vitamin deficiency is not a recognized or diagnosable clinical entity in this country. 2. With ordinary diet yeast does not have any effect on growth, even of babies and children. 3. The one effect of yeast that has been definitely established is the laxative effect. This may be useful in chronic constipation but no direct method of study is at present available for determining its advantages or disadvantages in comparison with other laxatives. After considering the recommendations of its Research Committee, the Council for the present decided against an investigation into the problematic usefulness of yeast as a therapeutic agent. (*Jour. A. M. A.*, Oct. 14, 1922, p. 1354.)

Arsenauro.—Some ten to twenty years ago, this preparation had considerable vogue. It is believed to be similar in composition to solution of gold and arsenic bromid of the National Formulary. This contains bromid of gold and arsenic acid. Gold preparations were at one time believed to have therapeutic value, particularly as "alteratives." They have proved inefficient and have been discarded. (*Jour. A. M. A.*, Oct. 21, 1922, p. 1446.)

Clearo.—This was a "patent medicine" sold by C. E. McCuistion, Dallas, Texas, doing business as "The Clearo Co.," as a cure for tuberculosis, asthma, bronchitis, hayfever, serious throat and lung troubles. An investigation by the post office authorities led to the conclusion that the product was worthless for the purposes claimed and that the Clearo Company was engaged in a scheme for obtaining money through the mails by means of fraud. The Clearo Company has been denied the use of the mails. (*Jour. A. M. A.*, Oct. 21, 1922, p. 1445.)

Typhoid Vaccination by Mouth.—Besredka has proposed vaccination against typhoid by mouth. His vaccine consists of a pill of bile and a tablet containing a mixture of heat-killed typhoid and paratyphoid bacilli. These are taken three mornings in succession. It is for the future to determine whether or not the method has value. (*Jour. A. M. A.*, Oct. 21, 1922, p. 1446.)

The Reactions of Boston to the "Reactions" of Abrams.—Abrams gave a clinical demonstration of his methods in the laboratory of one of his disciples in Boston. Abrams refused to submit the method, it is said, to any test offered, but confined himself to demonstrating the presence of lesions the existence of which could be proved only by postmortem examination. A member of the staff of the *Boston Medical and Surgical Journal*, a man in perfect health, was selected for experiment. By his diagnostic methods Abrams discovered in this healthy individual a streptococcus infection, tuberculosis of the intestinal tract, congenital syphilis and intestinal sarcoma. Otherwise the man was all right. It is understood that the volunteer inconsiderately refused to submit to a postmortem examination. (*Jour. A. M. A.*, Oct. 28, 1922, p. 1524.)

Susto.—According to the trade package Susto is a "Vitamin Tonic Food in Concentrated Form, rich in the Vitamins of Rice, Eggs, Milk and Yeast, Notably rich in Fat Soluble and Water Soluble Vitamins A, B, C, together with Beef Proteins, Nucleins and Iron." Susto is put on the market by Chester Kent and Co., Boston, better known as the sellers of Vinol. Vinol was essentially an alcoholic tonic, containing unrecorded amounts of iron, manganese peptonates, iron and ammonium citrate, lime and soda glycerophosphate, beef and codliver peptone, cascarin and sodium salicylate and 18 per cent alcohol. Some years back Vinol was advertised as a codliver preparation without oil. Vinol seems to have been made for Chester Kent and Co. by Frederick Stearns and Co., the firm which made Stearns Wine of Codliver Extract with Peptonate of Iron. When alcoholic tonics were no longer good form, Chester Kent and Co. employed Philip B. Hawk, Professor of Physiologic Chemistry at Jefferson Medical College, Philadelphia, to "perfect" a product that was sent him as Vinol Powder. Hawk did this: he also furnished the company with clinical reports and experimental data that could be counted on as valuable advertising thunder. Thus was born Susto. Patent medicine exploiters are cognizant of the fact that the public can be more easily humbugged on the food tonic scheme than by any other, particularly so when they can get the active coöperation of men whose scientific training should put them above such things. For one dollar the purchasers will get a few cents worth of food material. (*Jour. A. M. A.,* Oct. 28, 1922, p. 1538.)

PROGRESS AND CONSERVATISM IN THERAPEUTICS.—The Committee on Therapeutics of the Council on Pharmacy and Chemistry has published a communication calling attention to two books which physicians should have—*New and Nonofficial Remedies* and *Useful Drugs.* It is explained by the Committee that for eighteen years the Council has done its utmost to bring before the medical profession the truth concerning the new proprietary medicinal preparations which are being offered to the profession. The work and functions of the Council are discussed, and it is explained that while the Council was organized primarily to put a stop to the exploitation of proprietary medicines under false claims and the use of secret preparations, its activities have broadened until its work may now be characterized as a "propaganda for the rational use of drugs." The communication concludes: *New and Nonofficial Remedies* and *Useful Drugs* together furnish information concerning all drugs, old and new, which are at present essential to, or give promise of value in, the practice of medicine. They have been compiled with a special object in view, namely, to meet the needs of the student and practitioner of to-day. The report is signed by C. W. Edmunds, M.D., Professor of Materia Medica and Therapeutics, University of Michigan, Ann Arbor, Mich.; John Howland, M.D., Professor of Pediatrics, Johns Hopkins University, Department of Medicine, Baltimore, Md.; Ernest E. Irons, M.D., Ph.D., Associate Professor of Medicine, Rush Medical College, Chicago, Ill.; W. T. Longcope, A.B., M.D., Professor of Medicine, Johns Hopkins University, Department of Medicine, Baltimore, Md.; G. W. McCoy, M.D., Director Hygienic Laboratory, U. S. Public Health Service, Washington, D. C.; W. W. Palmer, B.S., M.D., Bard Professor of Medicine, College of Physicians and Surgeons, Columbia University, New York City; Francis W. Peabody, M.D., Professor of Medicine, Medical School of Harvard University, Boston, Mass.; L. G. Rowntree, M.D., Sc.D., Professor of Medicine, Mayo Foundation, Rochester, Minn. (*Jour. A. M. A.,* June 2, 1923, p. 1635.)

MORE MISBRANDED NOSTRUMS.—The following preparations have been the subject of prosecution by the Federal authorities charged with the enforcement of the Food and Drugs Act: Woods V. Tabules (Edward J. Woods), containing zinc phosphid, strychnin and plant extractives. Lukosine (National Drug Co.)—a powder containing approximately 80 per cent of boric acid and small proportions of zinc sulphate, alum and a salicylate, and traces of alkaloid, phenol, thymol and menthol. Eckman's Alterative (Burrows-Little-White Co.), consisting essentially of 94.4 per cent of water flavored with clove oil, 3.3 per cent of calcium chlorid and 2.3 per cent of plant extracts. Gombault's Caustic Balsam (Lawrence-Williams Co.)—a mixture of a fatty oil with approximately 20 per cent by volume of oil of turpentine. McGraw's Oil of Life (McGraw Remedy Co.), consisting approximately of 95 per cent of kerosene and small proportions of turpentine oil, tar oil and camphor. Vital Sparks (Hollander-Koshland Co.), gelatin capsules containing a fatty oil, colored red, and a sugar coated pill of zinc phosphid, damiana and strychnin. Mydyl Antiseptic Wafers (Chas. S. Ruckstuhl), composed of borax and starch. Syrup Leptinol (Balsamea Co.), consisting of Leptotaenia dissecta (a plant belonging to the parsnip family), sugar, glycerin, alcohol and water. Sangvin (Dr. M. Spiegel & Sons), composed essentially of plant drugs, including a laxative drug, sugar, alcohol, glycerin and water. Peterson's Ointment (Peterson's Ointment Co., Inc.)—a petrolatum ointment containing zinc oxid, tannin, phenol, and camphor. (*Jour. A. M. A.,* June 9, 1923, p. 1710.)

COD LIVER OIL IN TUBERCULOSIS.—Experiments carried out in the Hygienic Laboratory of the U. S. Public Health Service to determine the effect of cod liver oil on the tuberculosis of the guinea pig failed to show any definitely beneficial effects. There was no evidence of the deposition of calcium when this element was administered along with the cod liver oil. These results warn against unwarranted optimism and justify critical investigation whenever calcium or cod liver oil are lauded as a specific in tuberculosis. (*Jour. A. M. A.,* June 16, 1923, p. 1778.)

PEPTONE IN THE TREATMENT OF MIGRAINE.—The Council on Pharmacy and Chemistry publishes a preliminary report on the experimental status of the use of peptone in the treatment of migraine. Drs. Joseph L. Miller and B. O. Raulston report that the intravenous administration of Peptonum Siccum-Armour brought about improvement in a considerable number of cases. The Council points out that commercial peptones are heterogenous mixtures of uncertain composition, and that the results reported may have been due to tissue impurities rather than to peptone itself. It is, therefore, evident that the reported results cannot be made the basis for a rational treatment of migraine. Peptonum Siccum is stated by Armour & Co. to contain 90 per cent of protein. Seventy per cent of the protein content is in the form of peptone and secondary proteoses, while the remaining thirty per cent is in the form of amino-acids. Those who wish to make experiments with peptone in the treatment of migraine should use the particular peptone used by Miller and Raulston or one which has an essentially similar composition. (*Jour. A. M. A.,* June 30, 1923, p. 1910.)

PHYSIOLOGIC CLINKERS

One reason why the professional study of science in general, and medicine in particular, has failed to win public applause and gather popular support in larger measure than it does at present lies in the distortions and misrepresentations to which this department of learning has all too often been subjected. The quack and the impostor make no sincere pretense of adhering strictly to the known in heralding their claims; the pseudoscientist usually dresses his progaganda in a variety of raiment that may include ignorance, erroneous belief and mere conjecture. All too often, even the reputed scientist is found supporting a doctrine that is dangerously near uncertainty of demonstration, or rests at best on the basis of inadequate investigation. Much of the scientific teaching of to-day is permeated with a cock-sureness that is unwarranted by the meager facts of experience or experiment.

When the out-and-out fraud is perpetrated we do not hesitate to assail the perpetrator. The Propaganda for Reform supported by the American Medical Association is frank and unrelenting in its attacks on such persons as nostrum venders and their ilk. Even the public can usually appreciate the propriety and benefit of these efforts to eradicate a harmful evil. Criticisms of the food faker, the health faddist and similar types of pseudoscientists usually find a less sympathetic hearing, possibly because the man in the street is unable to distinguish between the language of these uncritical if not unscrupulous propagandists and that of the honest devotee of science. As for the unweighted or unguarded statements of the latter, they are often received as the dictum of "authority." Who among us can always discriminate between the offhand remark and the well reasoned belief of an "expert" in science?

The time has come when those interested in the dignity of science should protest, wherever it seems desirable, against any semblance of finality or any assumption of authority in unwarranted statements of those who trade on scientific investigations. When we hear the enthusiastic advertiser say that "fish is a brain food" or that his suction device will "grow hair" on a bald head or that electric belts will prevent an attack of rheumatism, let us soundly berate him. Let us not overlook the more subtle forms of questionable information such as recently appeared in the alleged remarks of a president of one of the prosperous medical cults. Attacking what he termed "food drunkards," he was quoted widely as saying:

> The American diet of bread and meat and potatoes, topped off with sweets, is the cause of more spinal curvature and joint deformation than any other one thing. If congress would place a tax of a dollar a pound on sugar, the national health would show an immediate improvement. As for bread and meat and potatoes, they are too heavy and concentrated, and form clinkers in the system.

It is, of course, true that bread and meat are "concentrated foods" when compared with fruits and vegetables in general. However, few foods in the entire dietary of man show as high a coefficient of digestibility as do the items which the "drugless" food "expert" has so glibly condemned. What, then, is meant by "clinkers in the system" in the case of these foods? Surely not indigestible residues. Studies in nutrition belie such an answer. Or are there perhaps "clinkers" in the metabolism—some half-oxidized fragment of an amino-acid or glucose? Scientific reasoning fails here when the unmeaning analogy of the cellar furnace is used to conjure with before an audience that understands the firebox of iron and clay only. Bread, the backbone of our national dietary, produces physiologic clinkers? Bosh! And, yet, a little physiologic knowledge is a dangerous thing—in the hands of a clinker expert.—*Jour. A. M. A.*, July 21, 1923.

PASTEUR AND THE CHILDREN

In view of the intimate relationship between the discoveries of Louis Pasteur and the prevention of infant disease and the protection of child health, it is interesting to have attention called, as Dr. John Foote has recently done in "Mother and Child," to the special philosophy of Pasteur as related to children, and to the manner in which France has recognized this aspect of the great investigator's life. France has perpetuated this relationship in virtually all of the monuments raised to its greatest citizen. At Dôle, where Pasteur spent his boyhood, a mother and two sick children symbolize grateful humanity. At Arbois, near by, where Pasteur passed his boyhood, is a bronze statue looking up the street on which Pasteur walked on his way to school. At Lille, Pasteur stands on a pedestal, holding a flask, while below a peasant woman holds up to him a child in token of her gratitude. And before the Pasteur Institute stands the well-known figure of the courageous shepherd boy holding off a mad dog. In the life of Pasteur, as told by Vallery-Radot, are the beautiful letters which he wrote to his children, emphasizing his humane regard for child life Dr. Foote wisely suggests that the story of Pasteur and his work be told to every child, for in this manner may we hope for a future generation firm in its support of true science and ready to assist in the prevention of disease.—*Jour. A. M. A.*, June 16, 1923.

BUBBLES

To err is human, but for a doctor to err is sometimes inhuman.

Wonder if conscience isn't one of those undiscovered endocrine glands.

They say 'twas a goose that laid the golden egg. Then, if birds of a feather flock together, is that the reason why some of our quack friends have such luck in picking up golden eggs?

Somebody better arrest the Governor for practicing surgery without a license. We do hear he has been cutting appropriations lately in a simply scandalous way.

Why all the fuss about whether or not man springs from monkeys? There is no question at all that woman springs from mice whenever she sees them.

A patient waiting in the oculist's office until the doctor had treated the ten or more patients preceding her was recently heard to remark: "Doctors don't have to work hard, and they make a lot of money." Oh, boy! Wish somebody'd show us how to do it!

The A. M. A. celebrates its seventy-fifth anniversary in 1924. Do you know of an older organization in the U. S. with a better record behind it?

Abrams says that every disease has its fundamental vibration ratio. Wise man! He picked out a specialty of which nobody knows the first thing, so he can always say that his critics don't know what they are talking about.

FOR SALE: Country practice ($5,000 per year). Nearest competitor five miles. Good roads, schools and churches. Collections 95%. Located in central Pennsylvania, in the center of a very rich farming district. Nothing to sell but property with all modern conveniences, including three office rooms. If interested address D. E. L., care the ATLANTIC MEDICAL JOURNAL, 230 State St., Harrisburg, Pa.

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ORIGINAL ARTICLES

EARLY DIAGNOSIS AND TREATMENT OF MALIGNANT DISEASE OF THE LARYNX*

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To go fully into all the phases of the early diagnosis and treatment of malignant disease of the larynx, and to review the literature, would consume a great deal of time. I shall, therefore, confine myself to the brief discussion of the most important points, and relate some of my own experiences.

In treating malignant disease of the larynx intelligently, one must bear in mind the clinical classification, for the location and extent of the lesion determines the treatment, and to a large extent, the life of the patient. The clinical classification as suggested by Krishaber seems concise and adequate, viz: first, intrinsic, i. e., arising from the vocal chords, ventricles, ventricular bands, interarytenoid and subglottic area; second, extrinsic, i. e., arising from the epiglottis, arytenoids, aryepiglottic folds, pyriform sinuses, and pharyngeal surface of the cricoid cartilage; third, mixed, consisting of intrinsic and extrinsic.

Fortunately, intrinsic cancer, as shown by statistics, occurs more frequently than extrinsic, the vocal chords being the most frequent site of involvement. It develops slowly, does not extend rapidly, and metastasis is late due to the confined arrangement of the laryngeal lymphatic system. There are abundant lymphatics within the larynx, which anastomose freely with each other, but communicate with only a small gland on each side of the larynx which does not directly communicate with the general lymphatic system. To this anatomical arrangement is due the success of proper operative measures in the intrinsic type of laryngeal cancer. The extrinsic cancer is a different story, the course is rapid, the glands are involved early, metastasis occurs rapidly, and operative procedures are much less hopeful.

Early diagnosis of laryngeal cancer is of the utmost importance, for when recognized in its incipiency 80 per cent of cures may be expected if proper surgical treatment is at once instituted. The early signs and symptoms are usually few and varied, depending largely upon the size and location of the growth. If located on a vocal chord, hoarseness is usually the only early symptom, while, if located on the aryepiglottic fold, it may develop to a considerable size, and indeed involve the glandular structure of the neck, without producing symptoms of any severity.

One should not wait for the symptoms described by the old textbooks, such as pain, dysphagia, dyspnea, cachexia, and glandular metastasis. These are grave symptoms, and when present the patient has already usually one foot in the grave. In those cases which complain of stinging pains in the throat, associated with hoarseness lasting for more than a few weeks, the patients should not be given sprays and laryngitis tablets until the larynx has been properly inspected by a competent laryngologist. All cases of hoarseness lasting more than a few weeks, especially after the age of forty, should be looked upon with suspicion, and a thorough examination is at once indicated, this to include, besides a thorough inspection of the larynx, a general physical examination, including examination of the blood and chest, and x-ray.

Cancer of the larynx may readily be confounded with tuberculosis, syphilis, chronic laryngitis, perichondritis, pachydermia, and benign growths, or it may be coexisting or superimposed upon one of these conditions. One-sided indurating lesion, with lessened chord mobility, is very suggestive of malignancy. The early involvement of the cricoarytenoid joint, producing immobility from infiltration, is a distinguishing feature between benign growths of the larynx. Pain on swallowing and radiating to the ear, is a late symptom in the intrinsic form, but may be present early if located on the aryepiglottic folds. The appearance of the lesion may be misleading. Papilloma often have a suggestive appearance.

Should biopsy be practiced in all cases, is a question often debated. Some are of the opinion that it is a means of stimulating the growth. My own personal feeling in this regard is that I should not care to have my larynx treated radically without the diagnosis being confirmed by the pathologist. This was forcibly impressed upon me two years ago by seeing a patient sixty-eight years of age with an ulcerated growth located on the right vocal chord. It was thought by two laryngologists to be malignant, the entire growth was removed by endolaryngeal method, and biopsy proved it to be a simple papilloma. There has been no evidence of any recurrence. I have since seen another similar case, and it was not possible to make a definite diagnosis except by biopsy. I therefore feel that for all doubtful neoplasms of the larynx a portion of the growth should be removed for microscopic examination, provided it is made to include the deeper tissues; otherwise, it may not be confirmatory.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

The tissues should be examined as rapidly as possible, so that no time is lost in carrying out the proper treatment, should cancer be the diagnosis.

Treatment: The history of the treatment of laryngeal cancer covers a long period, and the literature is voluminous. No treatment as yet discovered has produced results as compared with those accomplished by surgery in operable cases of cancer of the larynx. In properly selected cases, among well-known forms of surgical procedures that are described, depending upon the size, site and extent of the growth, are: first, endolaryngeal excision; second, thyrotomy or laryngo-fissure; third, partial laryngectomy; and fourth, total laryngectomy.

Endolaryngeal excisions condemned by most writers on the subject, as being inadequate. However, apparent cures have been reported by Harmon Smith, Beck, pierce and others. A Japanese laryngologist, Okada, reported in June of 1922, at the meeting of the American Laryngological Society, fifteen cases of carcinoma of the larynx treated by this method, in only three of which were the results not good. All agreed, however, that this type of operation for malignancy of the larynx is limited to a very few selected cases in which the growth is strictly confined to a small area.

The operation is best performed by direct laryngoscopy, some preferring the suspension type. Thyrotomy, or laryngo-fissure, for cancer of the larynx, is said to have first been practiced by Dr. S. Solis Cohen, the father of American laryngology, in 1868, and developed later by Delavan, Jackson, Semon, Butlin, and others. Of this, Jackson says:

> "In an early intrinsic malignancy of very limited extent, not involving the posterior portion of the larynx, the results of thyrotomy have been positively brilliant. Nowhere in the whole realm of surgery of malignant diseases have such results been obtained as in thyrotomy in such cases."

The indications for this operation are limited to that type of intrinsic cancer of the larynx in which it is possible to excise the entire growth over an area sufficiently wide to include normal healthy tissue. If, in splitting the larynx, it is found that such a procedure is impossible, then all preparations should have been made to proceed with a more radical operation.

A recent contribution by Sir St. Clair Thomson, on the results of 51 cases treated by this method, is most interesting. Thirty are free from recurrence, and alive, at periods varying from one to thirteen years. Eleven survived from various periods up to ten years, and died of other diseases. Two cases died within forty-eight hours after operation. The remaining eight cases died of local recurrence.

The statistics of Semon and Jackson are in about the same proportion.

Personally, I have had only two cases on which I have performed a laryngo-fissure. One died of recurrence within eight months; the other is still living and well, after two years.

The technique of this operation is so well described in most textbooks that I shall venture to show only a few slides of the important steps.

Partial laryngectomy, because of the marked infective pulmonary risks and high mortality, is very seldom employed.

Total laryngectomy, an operation of an extremely high mortality in the early days of its development, has in recent years been the means of saving the lives of many cases suffering from this unfortunate disease, and no doubt many more who have died might still be living had this operation not been refused, or had not temporizing and ineffectual measures been resorted to.

The indications for total extirpation of the larynx are all cases of intrinsic cancer in which thyrotomy is contraindicated, extrinsic cancer in which there is no mediastinal evidence of metastasis, and those cases in which the general condition of the patient is sufficient to warrant such an operation. Many cases of cures of laryngeal cancer are removed from this operation.

I wish simply to report briefly, by the use of lantern slides, the results obtained in seven cases of total extirpation of the larynx. While the period since the operation on the living cases is far too short to determine the cure, yet the enthusiasm and optimism is so great for the relief afforded these unfortunate patients, that I deem it advisable to present them at this time. Of the seven cases four are living. The longest period since the operation is one year, and the shortest five months. There were no surgical deaths. Of the three deaths one lived six months and died of recurrence in the thyroid gland. Another lived four months and died of metastasis of the lungs and mediastinum. The third lived three days and died of what was thought to be an embolus.

Radium has been used in all stages of laryngeal cancer. The results have been varied and confusing. Some have reported cures; the majority have been failures. It has been my privilege to use it in many cases, but without any permanent results. I have seen retrogression occur in the most astonishing manner, only to recur in a most virulent and rapid form. I believe radium is of the greatest value as a preoperative and postoperative measure.

DISCUSSION

Dr. Robert Ridpath (Philadelphia, Pa.): I am very glad to hear this paper and congratulate Dr. Lewis on presenting it. There were one or two points which struck me as very good, and there is one point which I think he should have mentioned. Although the paper is entitled "Early Diagnosis," I think it would have been better should he have pointed out more clearly the difference between the position of malignant and benign growths in the larynx. Although he did show in one of the lantern slides a malignant growth on the anterior part of the larynx, generally speaking, in 70 to 80 per cent of his cases the growths occurred at the posterior. These reports include papillomas, angiomas, etc. Therefore, malignancy of the larynx usually is in the middle or posterior third. We do have carcinoma and various malignant growths occurring in the cord itself. In my experience this extends very rapidly to the muscular structures connected with the cord and the ravages of the disease are much more in the muscular structures than in the cord itself in the very beginning or early stage.

Dr. Lewis is perfectly right and I am glad he brought out the point that the extrinsic malignancy is much more rapid than the intrinsic. Concerning the procedure for treatment of these cases: unfortunately, my experience has been decidedly limited since Dr. Jackson came to Philadelphia. Before his advent here we saw many more cases than we do now, because they very wisely go to him. However, if we can possibly diagnose or suspect a malignancy of the cord or even of the adjacent structures in its very beginning, I doubt the wisdom of taking this out by the direct method. My experience has been that this does not remove the growth in its entirety. Others may have better results. I find that the method devised by Dr. J. Solis Cohen many years ago—going into the larynx, opening it, as Dr. Lewis has so beautifully pictured—will give a better result than trying to remove the growth by the direct method.

Dr. Lewis (in closing): I should like to correct a false impression and that is if we suspect malignancy the growth is never operated on endoscopically. A biopsy is done and if the diagnosis is cancer, the operative procedure which we deem best is carried out.

Replying to Dr. Mosher, I have never used rectal anesthesia in laryngectomized cases as the narcosis is not so well controlled. I much prefer the ether or chloroform. I have used it however in rhinoplastic cases with excellent results.

MEDICAL CARE OF DEPENDENT CHILDREN*

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At first thought one might consider the medical care of dependent children no different from the care of other children. It is one of the objects of this paper to show that there are differences and to point out what these are. A second object is to explain the workings of the Associated Medical Clinic of Philadelphia which is a clinic concerned solely with dependent, neglected or subnormal children. Finally we wish to discuss a few of the unusual problems connected with this work and to show some of the results, good and bad.

These terms, dependent and neglected children, are broad. They include not only what you probably think of first—the child without either or both parents, who has stolen or run away or committed some other moral wrong and becomes a charge upon society in general through the agency of the court—but the words are far broader and may include babies, either legitimate or illegitimate. The latter may have to be cared for temporarily pending recovery of the mother, or more permanently until the mother's support can be arranged for. Babies born in wedlock may be turned over to some charitable agency through breaking up of the family by death or illness of one or both parents, poverty or many other causes. Children of either sex become wards of the Children's Aid Society or Children's Bureau for temporary or semi-permanent care, being committed by the court through some family upheaval, or because of failure properly to support the family or because the child is unwelcome in his home owing to the peculiarity of his behavior or apparent or real mental defect. Children may be committed to the care of the Cruelty Society as a result of abuse. Finally there is a great mass of children passing through the care of charitable agencies for observation and temporary care because of truancy, backwardness, minor moral failings, etc.

In an effort to secure a complete physical examination of these children, two years ago the medical examining clinic formerly held in the back rooms of one of the agencies, was reorganized. This reorganization resulted in formation of the Associated Medical Clinic, now in the Department for the Prevention of Disease of the Children's Hospital and supported by the Children's Aid Society, Children's Bureau, Seybert Institution and the Pennsylvania Society to

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Protect Children from Cruelty. The organization of the clinic is briefly as follows: One physician, one assistant physician (a graduate of the Woman's Medical College), two trained nurses (one giving full time to the home visiting of Children's Bureau babies and the other giving half time to the clinic and half to visiting the Children's Aid Society babies), a consulting pediatrician, a consulting dermatologist, a surgeon, a serologist, an ophthalmologist, a dentist and a radiologist who is also the radiologist to the Children's Hospital. All are salaried except the consultants. The assistant physician is on full time, giving her afternoons to the visiting of children who may be sick in foster homes. The other officers are all on part time. The volume of work is fairly large, 5,389 visits being made to the clinic in 1921 and 1,295 new children being sent for first examination.

The object of the Clinic is to afford to each child coming under the care of any of the agencies mentioned, the opportunity for a complete physical examination. Upon his first visit the child is weighed and measured. He is then given a thorough examination from head to foot. The skin, nose, throat and teeth are carefully inspected, and the head for nits, lice, ringworm, eczema, etc. As a matter of future reference it is well to put in the history whether or not lice or nits are present.

Heart, lungs and abdomen are carefully examined. Boys are examined for phimosis and undescended testicle, and girls for the presence of any vaginal discharge, and if they are to be placed with other girls or babies, a vaginal, or if possible, a cervical smear is taken. Posture and the general state of nutrition are considered, special attention being given the shoulders, spine, knees and feet. A routine blood Wassermann test is not made but any suggestive sign of congenital syphilis or an immoral family or personal history call for this test. It is made on all foundlings and on all children to be admitted to certain institutions, for which the Clinic acts as admitting physician. Eyes and ears are given a general testing, and if any abnormality is found the child is referred to the proper specialist for more thorough examination.

2. The greatest problem met with in the dependent child (apart even from unhappiness) is that of malnutrition. Adopting the weight to height ratio (except *always* in certain unusual children) and using the tables compiled by Emerson of Boston for the Nutrition Clinics for Delicate Children, we found during the year 1921 that of 1,295 children coming for the first examination 715, or 55.2%, were underweight, and of these 287, or 22.1%, were 10% or more underweight. In 1,137 of these 1,295 children, or 87.8%, one or more abnormal conditions was found. It should be remembered that the children comprising this series are children in many cases who have been neglected or abused; some have been runaways and others unwelcome in their homes or children who have been intensely lonely or unhappy, so that the standard of nutrition in this group is naturally unusually low, and the percentage of underweight or otherwise abnormal children should not be compared even with those of the ordinary public school group.

In an effort to discover whether underweight bears any relation to anemia, routine examinations of hemoglobin and erythrocytes have been made for the past nine months on children 10% or more underweight. The results of this study will be published separately but it may be said very definitely that we have found no direct ratio between the percentage of underweight and the decrease of red cells or hemoglobin.

Naturally it is of no use to the child to have all of these examinations unless he is to benefit thereby. As soon as the examination is finished the result is dictated and typewritten in duplicate, one copy going at once to the society referring the child (being telephoned if there is need), the other copy being kept on file at the Clinic. At the close of each examination definite recommendations are made as to what is necessary to put the child in good, or at least better, physical condition. During the examination it is important to be constantly considering the child's mental condition, his general state of intelligence, etc., and those children distinctly subnormal or apparently under some mental or emotional strain are referred to the Department of Child Study, under Dr. Taft, for mental examination.

It is important with all of these undernourished children to state definitely when they should return to the Clinic. Children 10% or more underweight return in from two to four weeks, depending on their condition. If there is any suspicion of tuberculosis, of course they return sooner. All children under foster care should be reëxamined once a year. A card check list is very valuable to make sure that such children do return when desired and to make sure that suggested recommendations are being carried out.

It has been the policy of the societies maintaining the Clinic to grant the greatest freedom in the use of the laboratory and the x-ray. There is no restriction placed upon the Clinic as to the amount of pathological or serological work. As a result blood and urine studies are freely made. A urine examination is made before each dose of salvarsan and on many (but not all) new children. Metabolism studies have been made on a few children who show symptoms of endocrine disturbances and we have believed it safer to make such studies before and during the administration of such substances as thyroid or pituitary extract.

The Schick test and where necessary toxin-antitoxin have been given to new children of the Children's Aid Society and the Children's Bureau. No case of diphtheria in children so immunized has occurred within the past two years.

A child must not be sent to a foster home without careful follow-up work by the social worker and nurse. Underweight children must have their diet and hours of rest, play, work and sleep very clearly mapped out and supervision must be exercised to see that this is done. Many, if not all, undernourished children need more rest fully as much as more food—rest of mind as well as body.

3. During the past year the average number of babies under the age of 3 years which the Clinic has had under its care has been 50, and the highest at one time 65. These babies represent all varieties of feeding problems from the simplest to the most complicated. Many are newborn, and artificial feeding must be commenced at once. Many are abruptly weaned, many have been overfed or wrongly fed and are ill when first seen. If the baby is obviously too ill to be cared for in a foster home he is admitted to the Children's or Babies' Hospital. Otherwise he is sent to one of the foster homes or possibly to a nursing home where a few children are kept for more accurate observation under the care of two trained nurses.

It has been the policy of the Clinic to feed the infants on milk mixtures as simply made as possible. Top milk mixtures are largely used and do not prove too complicated for the average foster mother. A Chapin dipper is supplied by the Society when necessary. Many of the younger babies are carried along for weeks on mixtures using the top 24 or the top 20 oz. milk. This avoids the necessity of purchasing cream and is probably also safer.

The Clinic has adopted the method of follow-up care of these babies described by Dr. Maynard Ladd[1] of Boston, whose clinic to those of you who are interested in this phase of medicine will prove most inspiring. The babies are visited every week or every two weeks by the nurse who carries with her a pair of light scales. (Ill babies are visited as often as necessary.)

Once a week the nurse reports at the Clinic for what we call "Baby Conference." We believe this to be a most important part of the baby work. At this conference also both Clinic physicians are present and the Supervisor of case work in the Placing-Out Department of the Society. A separate conference is held for the Children's Bureau and Children's Aid Society babies. The nurse reports on the weight and general condition of the baby, the weight being recorded on a chart. The condition of the stools, vomiting (if any), appetite, sleep, amount and formula of feedings are recorded on a special sheet for that purpose. Changes (if any) in the feedings are given in writing to the nurse. If a baby is not doing well, of course, a report is made at once to the Clinic by the nurse and the child is visited within a very short time by the assistant physician. Most of the boarding homes have a telephone and the foster mother is directed to call the nurse immediately if the baby is at all indisposed. It has been found advisable for the society to furnish beam balance baby scales in two of the homes where the more difficult cases are kept.

It has been a revelation to us to see how well babies may do under these conditions. Many of the babies are not seen in the Clinic for months at a time and yet the weight increases normally and the baby seems well in every way. The success of such a plan as this depends on the intelligence, accuracy and training of the nurse supervising in the foster home. With a careless or incompetent nurse it is doomed to speedy failure. A very important feature also is the training and coöperation of the boarding mother. She must be loyal to the Clinic, reasonably intelligent, willing to carry out orders and not to assume too great responsibility for the early signs of illness. Once the foster mother shows her interest in the problem, it should be the duty of the Society and the Clinic staff to stimulate her to increasingly higher ideals in child care. It is best to have but one baby in a foster home, at most not more than two. The success of such a medical program rests also with the societies or organizations supporting the Clinic. They must make it possible for the foster family to carry out the treatment prescribed. No adequate diet can be expected for the undernourished child at the average rate of board of two and a half or three dollars a week. During the year 1921 there were 5 deaths of babies under our care, due to marasmus or acute gastro-enteritis. To date in 1922 there have been three deaths, all due to marasmus, one complicated with furunculosis. (This includes deaths in hospitals.)

We have used extensively the strained vegetable soups, pea, bean, potato, carrot, spinach and celery, at times beginning as early as the 5th or sixth month once a day and increasing to twice a day at the end of the year. These soups are made up with the babies' formula instead of whole milk.

4. The work with older children from ten to sixteen or seventeen offers many problems. Here too as in the younger children the question of undernourishment is ever present. From our experience we most emphatically agree with Emerson,[2] Veeder[3] and others that this is perhaps quite as often due to lack of rest as to lack of food. We find the former more difficult to remedy than the latter. For children with marked undernutrition in addition to the extra milk and eggs, cereals, vegetables, etc., ordered, an outline of the child's rest, play and work and sleep periods should be given to the caretaker and checked up by unannounced visits of the nurse or social worker.

Naturally during this period of adolescence and school life there will be many problems based on sex hygiene. We have found the practice of masturbation unusually prevalent in both boys and girls. Enuresis is very common in this class of children and very difficult of cure. It is hard to find the foster home sufficiently interested to waken the child frequently during the night. We have tried the subcutaneous injection of pituitrin as suggested by Jacobs at the last meeting of this society, but we do not believe the drug to be entirely safe for children, as a few of our children had vomiting, vertigo, chilliness and marked pallor. The use of the extract of the whole gland by mouth is safer in doses one quarter to one grain twice or three times a day and occasionally succeeds after other measures have failed. We have found the most important element in the cure to be the absolute restriction of all fluids after 4 p. m.

To those of you who have not investigated the mental side of the child's life a whole new approach to pediatrics opens up. The studies made upon the children from our Clinic by Dr. Taft[4] are always interesting and often provide a clue to the medical diagnosis that would otherwise be missed. The relation between misconduct and mental worry is only beginning to be appreciated and both may have important relations to undernutrition. To those of you interested in this subject, Mr. William Healy's books[5] gleaned from his unusual experience at the Juvenile Courts of Chicago and Boston, will prove a mine of interesting information.

It is most important to have a woman physician trained not only in gynecology but in the psychology of girlhood for the examination of the older girls. Many of these girls have had unfortunate sex experiences (very often from ignorance entirely), others are on the road to becoming sexually promiscuous, others may simply be worried over sex matters in general, or some abnormality in menstruation or even the presence of leukorrhea, and a thorough examination and one or more friendly talks with her physician may suffice to put the girl on the right track.

At the request of the Philadelphia Society for Organizing Charity the Associated Medical Clinic is now making a medical survey of one hundred entire families—families who for some possibly unknown reason are gradually sinking in the social scale. Every member of each of these families is examined and a report is sent to the head of the society or his representative. It is important in providing information of this nature that it be submitted to some *one* responsible person for use in the proper manner. The discovery of some of the physical findings, as cardiac disease or early tuberculosis, has been of distinct benefit to the family itself.

5. In conclusion, we wish to state the following few facts:

1. Every dependent, delinquent or backward child is entitled to and should have a thorough physical examination before judgment is passed on him or her.

2. Children being admitted to the care of any charitable organization should have a complete physical and, if necessary, mental examination, and this should be repeated at least once a year.

3. Underweight children must have their hours of play and work as carefully outlined as their diet. They should be reëxamined every 2 to 8 weeks.

4. With the aid of competent nurses it is perfectly possible to take care of large numbers of babies in foster homes without the necessity of bringing the babies to a clinic.

5. We believe it far preferable to take care of dependent children in foster homes than in large institutions. The latter is undoubtedly the easier, but does not compare in value to the child.

6. The life of the dependent child at best is one full of difficulties, uncertainty and much unhappiness. To those working with these children it should be a privilege to make their lives healthier, more stable and more happy, and this can be done by proper and enthusiastic coöperation of physician, social worker and nurse.

7. In cities when several organizations are working with children and their problems, it is economically advisable to maintain a single examining clinic working in close coöperation with hospitals.

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DISCUSSION

Dr. William N. Bradley (Philadelphia, Pa.): I am very willing to admit that I feel quite incompetent to discuss this paper so admirably presented by Dr. Jenks, for I think it is a unique work; it is something which is in a class by itself, and I should say that Dr. Jenks must have a wonderful nervous system to be able to withstand day by day the very depressing effect of dealing with this class of children.

It seems strange to us as we look back and wonder why the public conscience was so long awakening. It is within the recollection of all of us when most of these cases were simply sent to homes and institutions very much in the same manner that a stray dog is sent to the dog pound. But that is not so to-day and these children, as Dr. Jenks has pointed out, through the agencies which he represents are apparently getting a square deal.

I should like to lay particular stress upon the physical examinations made by him; likewise to support his statements regarding placing these children in private homes instead of institutions. I should like to go further and say that I believe we should start propaganda to educate people of moderate and large means to take these children into their homes, not for pay necessarily, but as a philanthropy.

The value of the work, aside from what I have said, lies in following the cases routinely, noting the care they are receiving, and routinely examining them for development and growth.

For children of all ages I am a firm believer in directed play and playgrounds. Children should play, but I believe it is important, in older children particularly, that their play should be supervised and controlled. The class of children Dr. Jenks refers to should not be left alone to their own devices, for if they are they soon contract the vices without the prefix.

I can visualize no better work for our public libraries than to be equipped to entertain girls and boys of 6 to 16 by classes, or groups, leading them into the paths of finer things, interesting them in selected books, games, amateur plays, organizing clubs for boys and girls, giving them an interest and a new view of life. Camp Fire Girls, Girl Scouts, Boy Scouts, Junior Red Cross leagues, are only a few of the methods which are helpful in the way which I have mentioned. What we need is more community life. The libraries and schools should be always at the disposal of those whose aim is to stimulate for good and counteract influences for evil.

I have already mentioned the importance of physical examinations and mental tests. I believe also that before a child should be permitted to work, he or she should be required to come up to a standard of physical and mental fitness.

How are we as pediatrists concerning ourselves about the poor little lives that are being sacrificed on the altar of greed? How about the small children in the cotton fields, the beet fields, and truck farming? How about the coal breakers and the back breakers represented by the canning industries of the West, where boys are so exhausted after their day's work that they sleep in the fields in preference to walking the distance to their homes.

We know of mothers who must work, locking their children in the room all day, with little food, and in one case I know of personally, a child was locked out of the house all day until the mother should return at eight or nine o'clock at night.

What is needed is improvement in our economic conditions, measures for the prevention of accident and disease, provision to fill the father's place when he shall be dead or incapacitated, protection for working mothers suffering from fatigue and ill health, increase in nursing facilities, and, as already suggested, provision for the care of children out of school hours.

In conclusion, I desire to pay tribute to the organizations which Dr. Jenks represents, and to Judge Brown's court in Philadelphia, which I believe has been the means of very much good.

Dr. Edward L. Bauer (Philadelphia, Pa.): One of the points in the discussion of Dr. Jenks' paper which comes to my mind is the possibility of dispensing with the institutional care of infants. Dr. Jenks has shown the ideal in placing these children in homes, and Dr. Bradley has gone one step further and offers the babies to all of our homes. Will we have enough homes to go around where these children will be acceptable, and do we not have another duty to perform to make these infant homes institutions that can well represent us and do the work economically for us? I do not know very many of them to whom I would care to entrust children, but there are some that have possibilities. I am afraid that if we take up the matter of individual homes too rapidly we will dispose of institutions that are a very necessary factor in carrying out good work with children.

May I state that I think that Dr. Bacon's work is probably as much a prophylaxis in dealing with the problem from an economic standpoint as anything we are doing. The supervision of the babies, the regulation of the budget, etc., in families, is going to save a great deal of the poverty and penury that will bring about just what Dr. Jenks and his coworkers are trying to ameliorate.

Dr. William N. Bradley (Philadelphia): I should just like to reply to Dr. Bauer. I am not at all a believer in institutions for children. The principal reason is that boards of management of the institutions cannot be controlled; you cannot educate them up to do the right thing for the child. If you can get an institution with plenty of money and plenty of ground, and can organize it, you may have a few homes on these grounds for small groups of children. But as the institutions are run to-day, I am absolutely opposed to institutional care for children. There is a lack of intelligence and willingness to do on the part of the boards of management, which fails to accomplish the best results for the child.

Dr. Percival Nicholson (Ardmore, Pa.): I wish to express a sense of appreciation for the stupendous work and the magnificent manner in which it has been accomplished. From what I have seen, there are very few hospitals wherein such extensive infant and child care is available. I do not think the cases receive such extensive, careful and exhaustive examinations as have been done by Dr. Jenks. Another thing that is very important is to realize that while we have to have hospitals, a child in a hospital after a certain stage begins to do poorly. This same child where it can get the individual mother's attention begins to improve and terminates as a successful case. This work is wonderful and the work that they are proposing to carry out is increasing in its scope tremendously, and I think few of us realize what is really being accomplished.

Dr. Edward L. Bauer (Philadelphia): I should like to hear other opinions on institutional care of babies, since a large sum of money is almost within my grasp to build such a place.

Dr. John F. Sinclair (Philadelphia, Pa.): I am in thorough accord with Dr. Bradley. The board of managers do not have any vision, they do not live up to the responsibilities that are placed upon them, and the institutions are sadly lacking in those things necessary for the care of children. That is true not only of the denominational but all nondenominational institutions. There is only one institution in Philadelphia of which I know of that in any way begins to approach the ideal, and yet that is far from satisfactory to those of us who have been thinking about this a great deal.

Dr. Jenks (in closing): Of course I am in favor of placing children in individual homes. I do not believe we can get the results with a large number of children together under the present standards of institutional management that we can get in individual homes where you can have the personal contact with the foster mother. It has been a large part of our work to try and educate, to try and find a class of foster mothers who will be at least approaching the ideal of what we should like to have or what children should have in their own homes. That, of course, is hard to find. That causes a constant blocking of our work. We cannot find enough homes to satisfy the demand for the number of children who apply for our care. We cannot begin to take all the children that societies want us to take, and that is the practical application at present of what Dr. Bauer says. We should have to have institutions for many years to come, but I think the aim should be to get these children into a home where there are at least not more than three children, and preferably not more than one. In our baby homes we try not to have more than one baby in a home.

When difficult feeding cases come to us they are at once sent to a home about eight miles out in the country under the care of two trained nurses who have two helpers. For each of these babies the society pays the sum of $10.00 a week. You cannot get a good foster home for $1.00 or $1.50 a week. You have to pay a decent wage. The Children's Aid Society, covering the eastern half of the state, pays from $3.50 up. Most of the Children's Bureau homes, where we have a large number of babies, pay $8.00 to $10.00 a week; and in addition to that we supply the scales and extra feeding for any of the more complicated baby formulas.

PREVENTABLE AND CORRECTIBLE DEFORMITIES OF CHILDHOOD*

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The deformities of children, while essentially an orthopedic problem, cannot fail to interest those of the profession who first observe them; namely, the obstetrician, the pediatrician, and the general practitioner. With them must rest the responsibility of early detection and early treatment; to them must come the realization that no degree of skillful mechanical or surgical aftercare can balance the beneficial effect of immediate, though simple, measures.

Physical deformities seen in infancy and childhood may be generally classified as congenital and acquired. The former are not preventable, but a very large percentage are correctible or subject to much improvement. The acquired deformities, on the other hand, are almost wholly preventable, and, once established, are also subject to correction. The logical inference from the foregoing is that deformity, per se, is largely unnecessary, inexcusable, and a stigma on the medical community where abundantly found. The continuous and alarming frequency of untreated or inadequately treated preventable and correctible deformities would seem to justify a brief review of the subject.

A consideration of the problem of deformity also involves that of loss of, or interference with, function. The two are coexistent and interdependent. Function depends primarily on restoration of form, while the latter underlies physical mechanics. Modern treatment does not terminate with correction of deformity, for, of the two, functional restoration is the more important. Primary measures for functional results are, however, more pertinent in the treatment of adults (as in war or industrial injuries) than in children, where we are favored by the inherent tendency of youth, aided by growth, to reacquire normal use if the underlying form is at all propitious. For the child, deformity is the fundamental problem, if concomitant functional impairment and improvement are never overlooked.

Practically all acquired deformity may be considered preventable, except in cases of serious loss of tissue, such as would produce inevitable shortening. In general, such prevention may be accomplished by:

1. Early protective or prophylactic splinting, along the following principles:

a. Maintenance of the proper functional position of limbs and joints.

b. Protection or relaxation of weak or paralyzed muscles, and overstretching of overstrong muscles.

c. Prevention of scar tissue contraction.

2. Physiotherapeutic measures, involving the use of open splints and early motion where continuous fixation is essential.

3. Correction of faulty habits of locomotion, attitudes and posture in lying, sitting and standing, and environmental influences.

The essence of all these measures is foresight; nowhere is the "ounce of prevention" more important. Incidentally such preventive methods, especially splinting, often comprise the fundamental therapeutic agents, thereby accomplishing both purposes. A few specific examples of these measures in the commoner deformities may be cited.

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a. *Paralytic conditions.*—The deformity or tendency to deformity is the result of a muscular imbalance, the relative overbalancing by a spastic muscle of its weaker normal opponent, as in the cerebral palsies, or by the stronger normal muscle of its weaker paralyzed opponent, as in the flaccid types, notably anterior poliomyelitis. At no time in the very early stages of these paralyses is it difficult to place the limbs in an absolutely straight position, and so maintain them, by the simplest splints or plaster. In general, the lower limb should be held with the hip and knee extended, and the foot in right-angled dorsiflexion. The upper limb should be placed in an abduction or aëroplane splint if the shoulder (usually the deltoid) is involved, the elbow should be in partial flexion and semisupination, the wrist in moderate dorsiflexion and the fingers semiflexed. If the trunk is involved, recumbency on a Bradford frame is the best method at first. For the specific case, however, the rule should always be to relax the weakened muscle and over-stretch the strong opponent, wherever found. There is nothing new about this principle; it is the failure to apply it universally and at the proper time that warrants comment.

Certainly, in infantile paralysis, we have the most striking example of the astounding difference in results between cases receiving early prophylaxis and those which have been neglected, or even postponed. It may be said with little fear of contradiction that the development of a deformity is inexcusable in a properly observed case; in other words, deformity is one hundred per cent preventable. Rest is the cardinal treatment in the acute stage. It may be best accomplished by simple light splints. These hold the limbs straight, and at about three months, when deformities tend to develop, they have been anticipated and arrested. The same principle is carried through the convalescent stage with suitable braces. The tendency to lie, sit or creep in positions which favor deformity is noted and checked. Meanwhile, the paralyzed muscles, held in relaxation, have been offered the maximum opportunity for the return of power, and have undoubtedly responded. What degrees of permanent deformity, involving marked structural change, of hopeless paralysis and atrophy, of endless and extensive operations and after-care, and of lifelong crippling, a very little foresight and knowledge may prevent!

b. *Joint disease.*—Here deformity is apt to exist in the early case, if acute, but is due to muscular spasm. The latter is largely eliminated by proper fixation or traction applied to the joint, so that it is rarely a factor in producing permanent deformity. If the course of the disease is such that ankylosis must ensue, it is usually possible at some stage in treatment to place the joint in its best functional position for ankylosis. The value of this is obvious; its neglect greatly increases the ultimate impairment. Secondary deformities, such as those produced by gravity, and extra-articular retraction, must also be foreseen and prevented.

c. *Extensive wounds.*—In these, deformity occurs from loss of tissue involving muscles and nerves, which are productive of a loss of balance between the opposing neuromuscular mechanisms of a limb, or by contracting wound granulations. This is particularly true in suppurating wounds of long standing, such as extensive osteomyelitis, where the attention is focused on the primary condition. Here the functional end-result will depend as much on the position of the parts as on the integrity of the tissues; in fact, the healing of the wound is often of secondary importance. A modicum of prophylactic splinting will readily anticipate these unwelcome complications.

d. *Fractures.*—Much could be said here of both primary and secondary deformities, but time forbids. The modern treatment is very largely designed to favor observation and care of such unfavorable tendencies by the use of open traction splints, overhead suspension, and free mobility of the patient. Add to this very early though mild physiotherapeutic measures, such as massage of muscles and gentle movements of the joints, and we have automatically reduced unfortunate results in form and functions to a respectable percentage.

e. *Static conditions.*—This is again a large subject, but a very important one from the standpoint of prophylaxis. Necessarily, most of the work which has been done for static and postural defects in both adults and children has been corrective. Nevertheless, such treatment is essentially preventive, as both primary and secondary factors in these conditions tend to increase rapidly. The developments and sequelae of faulty posture in the child, as affecting both the external and internal physical mechanism, are a serious menace to the health and efficiency of the adult. Probably 75 per cent. or more of school children exhibit static defects. Moreover, a very large proportion of orthopedic conditions seen in adult practice are avoidable if seen early. The conclusion is obvious. Add to this the complications and chronic diseases following in the train of lowered muscular tone and visceroptosis, and we find indications enough for the early detection of static faults.

The outstanding difficulty, however, in early diagnosis of the milder postural case is that the child has no complaint, the parent is oblivious, and the physician is not consulted. These conditions can be best checked up systematically in the school, but only by a properly trained observer. The detection of round shoulders, hollow back, protuberant abdomen, uneven hips or shoulders, knock knees, bowlegs and pronated feet, is simple if systematic, and the same may be said of treatment. Properly conducted group exercises, postural training in standing and sitting, and supervision of clothing and improper habits, will produce remarkable results for the majority. The more advanced case, with definitely atonic muscles and established deformity, will demand individual attention, special exercises and braces. It is in this type of case that the coöperation of pediatrician and orthopedist is most urgent. The individual soon exhibits symptoms which, arising from the same causes, call for both medical and mechanical treatment. The conscientious practitioner will readily detect such origins of later disease and disability, and take immediate steps to remedy them. He will not dismiss the apparently slight mal-alinement with the oft-heard remark, "It will be outgrown."

The subject of correction of deformity is, however, more extensive and diverse, and forbids detailed consideration. One may only point to the present unlimited possibilities of operative and nonoperative measures, to the achievements of plastic and cosmetic surgery, to tissue transfer and transplantation, to structural realinement through readjustment of tendons, ligaments and bones, to manipulative redressment, to corrective fixation, and to efficient physiotherapy, combined with the foregoing. Briefly, of the congenital deformities, the commonest are clubfoot, hip dislocations, torticollis, and defects of the limbs, all varieties of the first three being practically curable, at least from the standpoint of noticeable deformity and interference with function. The essential principles in the correction of congenital clubfoot are three; namely, to begin treatment in the first or second week of life, to avoid undue traumatism and operation, and to persist in maintaining an overcorrection of the foot until the deformity has been safely eliminated by normal weight-bearing. The importance of starting with the soft plastic foot of the infant and correcting the deformity before time has produced abnormal growth and rigidity seems obvious, yet the policy of delay is still observed. The avoidance of trauma, by conservative, nonoperative methods, is of fundamental importance because it is rarely necessary to cut or wrench the foot when treatment is begun early, the whole foot is treated instead of isolated elements in the deformity, and all structures are preserved intact for future function. The results in large numbers of cases firmly attest these facts. Here again, as we see these cases at birth or soon after, let us remember that delay is a certain menace to recovery.

Congenital dislocation of the hips is reducible in the majority of cases by the manipulative or closed method. Intractable cases require operation, but bloodless reduction should be first attempted. The best ages for successful results are from two and a half to five years. Torticollis is readily cured by operative division of the short muscles, followed by continuous fixation in overcorrection. Much can be done with congenital deformities of the limbs, due to the absence or failure of development of a long bone, by operative straightening, bone grafting and bone lengthening. Apparatus to support these limbs and allow walking is very essential, and while normal length or function cannot always be assured, we can at least correct the alinement and favor growth by functional weight-bearing. Such cases should never be considered hopeless or be ruthlessly recommended for amputation.

Of the acquired deformities, those resulting from the paralyses are unfortunately preëminent. Prevention of the deformity having been neglected, immediate correction is indicated because every day serves to mould the tissues more firmly into their incorrect form and relations, increased by growth and often by faulty weight-bearing, and because the deformity is always toward the side of the strong muscles, relaxing them, and away from the weak, overstretching them, thus producing the most unfavorable conditions for repair, as previously noted. Manipulative or operative correction, followed by retention with plaster or brace, not only serves to straighten the limbs and restore the static line, but also offers once more the maximum opportunity for recovery of the paralyzed muscles. It is indeed a common occurrence to find unexpected muscle improvement following an operation to correct a long-standing structural deformity of the foot. In many cases, also, where the paralysis may be considered permanent and the indication for ultimate operative readjustment has arisen, the deformity must first be corrected and the limb held for a varying period to favor the return of the underlying structures, notably bones, joints and ligaments, to normal shape. A period of normal weight-bearing in a light brace will then do much to restore normal relations throughout the entire static line and reduce the amount of disability to an unexpected degree.

Much or little may be said of the correction of deformities which are the result of traumatism, preventive methods having failed. The same principles of treatment hold here, as in other structural deformities, except that the work is often more difficult because of distortions from loss of tissue, and inflammatory or infectious complications. The correction of angulation, with particular attention to straight line muscle pull, proper joint mechanics, and preservation of the static line, are especially important. It is hard to conceive of a deformity of this type that is so bad it cannot be improved, from the functional as well as the cosmetic standpoint.

Static deformities have already been discussed under the subject of prevention. It must be remembered that these are due to two main factors, skeletal mal-alinement and muscular insufficiency, the latter predominating. Both are subject to correction, or more often to cure, if properly handled, and all such defects should be treated immediately and thoroughly when detected.

A word should be added regarding the application of treatment, especially the nonoperative. So much can be accomplished by various manipulative procedures, that there is often very little left for surgery, even in serious deformities. In the more acute cases, and in the absence of inflammation, forcible manipulation under an anesthetic, to break down soft callus and adhesions, stretch contracted ligaments and tendons, or reshape soft bone, possibly with the aid of an osteoclast or Thomas wrench, is alone necessary. For fixation after these measures, nothing serves the purpose so well as plaster of Paris, properly applied, and it may also be used for active correction, especially in sections for turn-buckle application or wedging. Splints and braces should be the lightest and simplest possible, for obvious reasons, and this precludes the heavy and expensive ready-made or store brace. Apparatus must be accurately fitted to the individual and adapted to his specific needs, and the brace-maker should stand in the same relation to the physician as the pharmacist. We do not ask the latter to prescribe, and the doctor who sends his patient to the shopman for treatment is negligent of his patient and his profession.

Lastly, mention should be made of the detection of deformity. Unfortunately, routine physical examinations as taught and made are very cursory as to skeletal defects and mal-alinements. Gross deformities and limps are readily observed; the minor or incipient case, often more important, is overlooked. The free use of the tape measure is somewhat of a remedy for this; a knowledge of normal joint movements and normal posture is invaluable. Attitude in standing, and gait, should never be neglected. There should be a routine for babies and infants, noting the position in lying, normal movements and muscular activity, the length of the legs, manipulation of the feet and larger joints, and examination of the spine. Many children would be spared serious physical defects in later life if this were oftener performed.

It is difficult to be precise as to the prognosis of deformities of childhood, as prognosis is in direct relation to the selection and efficacy of treatment. It is at least apparent that so much can be done that no case should be overlooked or postponed, and that both constructive and reconstructive orthopedic care offer definite relief to the great majority.

THE IMPORTANCE OF CLOSER OBSTETRIC AND PEDIATRIC RELATIONS*

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Whether the appeal be made to physicians or to laymen, the welfare of the infant brings a particular interest. Especially is this true with those of us who are engaged in child care and in child conservation.

The earliest prenatal care marks the beginning of infant welfare. The importance of prenatal care is well stated by Griffith, when he says, "It follows that the condition of the mother's health and her methods of living cannot fail to exert a great influence upon the health of the fetus, and, indeed, upon the whole later existence of the child." Since prenatal care is a problem for the obstetrician, the responsibility is also his of bringing a healthy baby, in so far as is possible. Maternal and fetal care are so inseparable that attention given to the mother reacts directly upon her child.

During the prenatal period not infrequently the obstetrician comes into knowledge of many facts which relate definitely to the care of the infant after birth. As an instance, I need only mention lues of the mother. All this information should be given freely to those responsible for the child's subsequent care.

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The interdependence of various lines of medical work is generally acknowledged. We know that this grouping of interests or specialties, whether it be between internist and surgeon, aurist, dentist, oculist or others engaged in special work, has developed because the patient thus is best served. With the growth of medical specialties has come the realization that, in many instances, the best care can be given the patient by those whose training, thought and work particularly fit them for the task. Despite the recognition accorded pediatrics as a specialty, neither pediatrists nor obstetricians yet seem to understand the full value of closer relations. There is an interdependence between these two specialties which, if established, can help both of us in our dealings with the newborn. In other words, closer working relations will be advantageous both to ourselves and to the child.

His training and his work naturally center the obstetrician's interest in the mother, the infant becoming a matter of secondary concern. On the other hand, the pediatrist is primarily interested in the child. The one thinks largely in terms of the infant, the other in terms of the mother. In so far as the infant is concerned, with its delivery and its immediate subsequent care, the responsibilities and the duties of the obstetrician should end.

We recognize the importance of the mother as a member of society. Economically and sociologically, during the period of pregnancy and parturition she deserves the best care and consideration at the hands of those thoroughly trained in that work—the obstetricians.

However, we must also recognize the fact that the mother attains her importance in society through her ability to perpetuate the race, and having done so, her child rightfully places an equally strong claim for care and attention upon those best fitted to look after him—the pediatrists. It probably is not an exaggeration to say that in *a great many instances,* after the first care is given to the newborn infant, the obstetrician is but little concerned about him. To be sure, he wants the infant to get along, and will do what he can to that end, but his first interest lies with the mother, and naturally so. To the mother is extended a great deal; to the infant, only too often, very little. A confession made by one of my obstetrical friends, was that "he rarely followed his babies." Not wilfully are these babies neglected, but the obstetrician is not particularly interested in the baby as one of his problems, and he can scarcely be expected to become a trained obstetrician and pediatrist besides.

On all sides we hear much about health conservation, and we emphasize its value. While sickness and accident are more dramatic than the various aspects of health conservation, we realize that a great deal is to be gained by studying the baby from a health point of view. Prenatal care is the first step in conserving child life. Nutrition clinics, children's health centers with health classes for infants and children, and welfare clinics may seem a logical second step in this broad program, but between prenatal care and welfare clinics for infants and children, is a gap to be bridged; namely, the first weeks of the infant's life. Litzenberg has termed this period "a sort of no-man's land," a period which may be claimed by both specialties. However, it must be admitted that pediatrics of the newborn has very little in common with obstetrics and very much in common with pediatrics.

This "newborn pediatrics," a field much neglected, offers fertile soil for investigation. The problems to be solved are many. The obstetrician can scarcely solve them, for the baby very soon passes from his care and observation. Many times the pediatrist is handicapped from his lack of knowledge of conditions existing during the intra-uterine period. The information which the obstetrician alone can give may be of inestimable value in later months and years. This in itself would seem to offer sufficient reason for coöperation.

Since upon the institution of proper feeding so much depends, it is essential that correct feeding habits be established as early as possible. The importance of breast feeding need not be emphasized here. Notwithstanding our realization of this, only too frequently a ready acquiescence is given to too early weaning, with no absolute indication for it. All of us have seen this, many times with unfortunate results. The obstetrician must share a part of this blame. The first prophylactic step in the care of the infant is proper feeding. To the pediatrist, as to no one else, is submitted the evidence of improper feeding. Were correct feeding habits established at birth, and continuously carried out under proper supervision, many of the wrecks we encounter after the third month, never would be seen. Not infrequently the obstetrician, unwittingly, is responsible, for at his suggestion certain formulae are early begun. Early infancy being a rapidly changing period of life, a food suitable at two weeks, becomes inadequate at one month or six weeks. Not realizing the necessity for changing the food, nor having been instructed to change, mothers frequently continue to feed their babies these insufficient formulae and sometimes bring about a much disturbed state of nutrition. Whether complemental, supplemental or entire bottle feeding be established, to the pediatrist should be given this responsibility, for a dual reason: first, because his training best qualifies him for it, and second, because the obstetrician oversees the feeding for a limited time only. Is it not more desirable from the standpoint of the child, to have so important a program begun by the one who ultimately assumes charge of the infant?

The obstetrician carefully observes the mother for a period of weeks following her delivery. His interest in and supervision of the infant rarely extend beyond the second week, seemingly justifying the statement (credited to one writer), that to the obstetrician "the baby is only a by-product of obstetrics." Were there no other, this one problem of infant feeding, with the importance of a proper beginning, and its far-reaching results, gives sufficient reason for early coöperation.

Especially desirable is this closer relationship in hospitals and in teaching clinics. There is perhaps no class of patients with whom the young physician feels more helpless than in his dealings with infants. The reason for this is evident. During his student work his relations are largely with the adult. His opportunities for observing the newborn and the very young infant are so limited that he acquires neither experience nor confidence in their care. During his obstetrical service he finds emphasis placed upon the care of the mother. The infant in many instances is not given close attention. The result is that the medical student and the interne come to look upon pregnancy and its conclusion as a process in which the mother alone is to be considered, with the product of pregnancy often lost sight of in the anxiety to do so much for the mother. With a closer relationship established, in which the pediatrist is called upon to assume full charge of the baby immediately after birth, both student and interne will regard the infant as an object worthy of considerably more care than frequently is given.

The interne year very wisely has been made a part of the requirements for medical practice. No longer is there doubt as to the wisdom of this provision. During this period of training not only does the young physician have the opportunity to observe the actual working of his theoretical knowledge, but he also is trained in new fields of work. With closer working relations between obstetrics and pediatrics the infants in our hospitals will be better cared for and there will be organized facilities for better training of our internes in this important work. As conducted at present, in most institutions the newborn service does not give the interne adequate training. Only too frequently the relative care bestowed upon infants and adults is in direct proportion to the sizes of their bodies. As a result, the young physician many times reaches the threshold of his medical practice insufficiently equipped for one of the most important parts of his work.

In our own state are sixty-three "full credit" hospitals. In every one of these there is a well equipped obstetrical department and I also take it, a pediatric department. With active coöperation in all of them there would go out annually a large number of medical men better fitted to cope with the problems of the newborn. It is a safe assertion that with better trained doctors both morbidity and mortality in early infancy can be decreased. I am well aware that in the consideration of infant morbidity and infant mortality there are many other questions involved than medical care. With the economic and the social aspects we are not at this time directly concerned. The family physician, in his close relations, can do much to shape the care of the infant, and to do it properly he must understand child care. Oftentimes he is the only one who comes into direct medical contact with the infant, so that a peculiar obligation is his, that of keeping the child well. Sometimes he fails in his obligations from lack of interest or from lack of knowledge. To those of us, therefore, who have the opportunity, comes the responsibility of better training for our internes, that they may more fully understand the problems of infancy.

Let it be understood that the services of the trained pediatrist are not always necessary in the care of the newborn, nor are they everywhere available. *Better* pediatric care is essential, and this will be supplied with better medical training, following the suggestions just given.

A splendid opportunity is offered obstetricians in advising mothers of the importance and the value of continuous medical supervision of the infant during the first year of life. Only to the occasional mother is given the ability, the confidence and the knowledge to carry her baby, unaided by competent advisors, through this stormy period in safety.

How may the obstetrician and the pediatrist work more closely together for the good of the child? In the first place we believe the infant's interests will be best served if, in our own hospitals immediately after birth, the infant be admitted as a pediatric patient and the pediatrist be placed in full care of the child. Of inestimable value will be the records and other information given by the obstetrician. In taking full charge at birth the pediatrist is given the opportunity for intensive study of the affections of the newborn and for the establishment of medical prophylaxis at the earliest moment. One of the most ardent advocates of this plan, Dr. Jennings C. Litzenberg, of Minneapolis, has this to say of it: "After eight years we find that experience has confirmed our theories. We admit that the babies are better cared for and many problems of the newborn are being studied which we would not have had the time nor the inclination to undertake. I thoroughly believed, when we made this change, that the pediatrist would take better care of the baby, and I am glad to say that experience has proved this to be true." In outpatient departments the work may be assigned to senior students under the supervision of junior assistants, the latter being responsible to the chief of the pediatric service.

The benefits from this closer relationship may be summed up, briefly, as follows: The efficiency of each specialty will be increased, by giving to each its own particular problems. The general practitioner will be better trained in a work with which he frequently feels so unfamiliar. The infant will be better cared for.

Highland Building.

DISCUSSION

Dr. William N. Bradley (Philadelphia, Pa.): This is a very timely paper and I have nothing to add. I simply want to confirm and support all that Dr. Everhart has said. I think when the cord is cut the baby belongs to pediatrics. Dr. Everhart's experience has been my experience with maternity hospitals—the baby is turned over to the resident or to the head nurse for feeding.

Dr. J. Donald Iams (Pittsburgh, Pa.): I have very few words to say, except that in the hospital with which I am connected for some years we have carried out just the plan that Dr. Everhart outlined. As soon as the baby is born it is turned over to me, and the entire supervision of that child is in my care. I have access to all of the records of the obstetrician and I superintend the hours of feeding and whatever other care is necessary. There is thorough coöperation, the plan works beautifully, and I am sure the hospital would not give it up for anything.

Dr. G. Victor Janvier (Lansdowne, Pa.): There are two or three little points in this valuable paper I should like to emphasize. I consider it the greatest crime to give the newborn infant sweet condensed milk, so that later it refuses the less tasty milk of the mother. As one of the humble workers in the obstetric camp, appearing before the gods of pediatrics today, I would say that I am using in my own practice, a prenatal diet for the mother, of corn meal mush, other cereals, milk, vegetables and fruit. I tell the mother she doesn't need anything else; she doesn't need meat, eggs, tubers, etc. If she lives on the former diet she will get through without an overgrown, fat baby. I think I can personally face Dr. Bradley with a clear conscience and without the veil of charity being drawn over my face, as I never allow nurse or mother to give the baby anything but plain water until the milk comes in. If the mother's milk doesn't come early, I call in my good friend the pediatrician to help me and advise the correct feeding.

Why is it that the other University of Pennsylvania courses are not made attractive for us, like Clark's and B. C. Hirst's clinics? If the medical side of the house and the pediatric side of the house would give an attractive course such as the above mentioned give us, the clinics would be crowded every day. That is simply a thought.

Again, we hear that the pediatrician should be called in as soon as the baby is born. Those of us who are not treading the Olympian Heights with the gods of obstetrics and pediatrics, and who have still to work among the poorer classes, can't call in the pediatrician at once. Personally, in my better class of patients, I am quick to call for help as an obstetrician, as soon as I need it.

Another great mistake the average physician still makes (and I would apologize for my confreres) is feeding babies every two hours. They follow out the old idea for the same reason that they persist in putting forceps on a posterior chin. For the same reason they will feed a baby every two hours because it has been done year after year. I would protest and would say I never feed my babies oftener than every three hours. I tell the mother, after confinement, "Eat everything and anything you want to build up your milk, and don't diet yourself. Make up your mind you are going to feed that baby every four hours," and the child's digestive economy will soon adjust itself to any sensible food intake. I am trying to do my duty from the standpoint of the teacher, the general practitioner, and from the standpoint of the obstetrician.

Dr. J. L. Foster (Blawnox, Pa.): I just want to say a word about the possibility of teaching the students and internes something more about children's diseases. It is a little hard for me to say what I want to say because there are two of my old teachers present; but no doubt the fact that we did not get more training in children's diseases was not their fault. The pediatricians should take more part in the medical course.

Dr. Litchfield said one day this week that the time would possibly come when they would put bacteriology, pathology and allied sciences in another sphere and teach them to men who did not have a medical degree. When I think of the hot afternoons three or four times a week that we were compelled to spend in making drawings of sections of the liver, kidneys and other things we have scarcely seen or heard about since, and when we got out into general practice and the first cases we saw were cases that we did not know anything about and had never seen a practical case, I appreciate very much the remarks that Dr. Everhart made. And I do make a plea, although we who are out of school now cannot be helped, to help the men who are the coming practitioners, for the pediatricians to take their own part in arranging a curriculum and try to have a fair portion of the time given to their department and not mostly to the other departments. If they can do that the men are going to benefit by it.

Dr. Harold R. Mixsell (New York City): We have in New York the rather unusual situation of having two services under one roof—the obstetrical side and the pediatric side. In the past three years we have correlated the two very nicely. The minute the baby is born we receive it and examine it thoroughly with the obstetrician. After that, every day, daily rounds are made by the attending physician on the pediatric side with the obstetric interne and the pediatric interne, and the feeding is regulated. The child is re-examined weekly until it goes out. Of course, these are the clinical patients primarily. After that, in two weeks' time they are directed to come back to the clinic, where they are seen once a week for the first three months of life; every two weeks for the second three months of life, and then once a month for the second six months. After that they are seen every three months and then twice a year. In that way we keep in touch with them. We not only examine the babies, but we attempt to teach the obstetrical interne and the pediatric interne certain facts about the feeding of infants and their care, and the diseases to which they are exposed. In addition, we feel that that particular time of life is very important, the first two or three weeks being too much neglected, when we consider all the diseases which babies can have, which should be studied and which have not been studied, such as syphilis, hemorrhage of the newborn, sepsis, etc., and all those diseases about which we know very little at the present writing. For that reason we have attempted this correlation. We have done it for the past three years, and are now beginning to get something out of it. The same thing is being done in the Sloane Hospital by the attending pediatrists, although they do not go into it quite as intensively as we do because they are not making daily rounds.

Dr. Walter S. Brenholtz (Williamsport, Pa.): As a general practitioner, and not as a pediatrician, I feel like saying a few words on this subject for two reasons: In the first place, a short time ago at a meeting of our county medical society, the secretary of this section made the statement that we were pretty good obstetricians but very poor pediatricians. Of course, he hit us all, I suppose, but while the essayist who has brought out the need for a closer association between the obstetrician and the pediatrician is right and should serve a useful purpose, yet in my mind he seems to have left the impression that when the cord is cut, the general practitioner in his obstetrical work ceases his care, observation and treatment of the baby. That has not been my experience and I do not believe that it is the experience of the general practitioner as a rule.

Calling in of the pediatrician as soon as the cord is cut is no doubt very good practice in hospital work, especially public ward work, but when you come to private practice, except most likely among the wealthy, it cannot be carried out.

In the training of internes, the close association between the pediatrician from the time the cord is cut, with the work of the obstetrician is very good, and will, as it is being carried out, according to the remarks that have been made here this morning, serve a very useful purpose by making a good pediatrician as well as a good obstetrician out of every general practitioner, and I hope that in the very near future your section secretary will be compelled to take back his statement made on that previous occasion.

Now, in general practice it is necessary for those doing obstetrical work, to take care of the babies also, and I believe as a general rule, they do; and although we do not pretend to know as much about the care of and treatment of babies as those men who have made a special study of that particular branch of medicine, I do not believe that the babies are neglected to the extent that the reader of this paper would seem to infer.

Dr. Everhart (in closing): I should like to emphasize one thing I said: It is not always necessary for the *trained* pediatrist to see these children, nor is it always possible to get the services of the trained pediatrist, but better pediatric service is desirable. I believe the obstetricians themselves would welcome this change, for it would give them a great deal more time for their own problems. That in itself would seem a sufficient reason for their dropping the care of the infant and I honestly believe most of them are willing to do so. It is simply a "hang-over" from one medical generation to the next. Because it always has been done seems to justify its continuation. Some obstetricians tell me they are quite willing to accept this change. Whether or not in actual practice they would welcome it, remains to be seen.

There is also the financial side to be considered. The obstetrician cannot say in every instance, "I do nothing with the baby; I shall have to turn it over to a pediatrist." Many times the family cannot afford to employ a number of physicians.

Better pediatrics with the newborn is the plea I make and the condition I should like to see brought about. As for feeding babies every two hours, that in itself simply strengthens the argument for making the change.

ATYPICAL MASTOIDITIS*

MATTHEW S. ERSNER, M.D.†

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The subject of atypical mastoiditis assigned to me is of extreme interest and every case is a problem in itself.

There is no definite pathognomonic sign upon which we can place our finger and state definitely that this is an expression of an atypical mastoid. It is upon the corroboration of many facts gathered from the history and the laboratory data, plus the general symptoms present, that we base our diagnosis. Often a thought creeps into one's mind that the diagnosis is intuitive, although one should fear the thought, because it is not based on scientific data. Since, however, the expression is current that the school of experience dictates to us, then it is simply the higher sense of development of the physician when he passes through his metamorphosis in the school of experience that often makes him sense the invisible and abstract conditions and interpret them into concrete facts. The consultant then, although often sneered at, should be classed amongst the supermen on account of his keenness in interpreting the obscure factors into realities. I do not know what I would have done without my dear beloved friend and chief Dr. Coates. His keen observation and sound judgments have carried me through many a dilemma.

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In the condition of atypical mastoiditis, which is often so puzzling, we find a pathological picture superimposed upon a pathological condition, absolutely devoid of certain set syndromic symptoms that should be present in an ordinary case of mastoiditis. In fact the "atypical mastoid" is the anarchist in the category of mastoid disease. In order to make a definite diagnosis, one must use all facilities available, and even at that, in many instances the conclusions are reached only by the school of experience.

I have thought it best to make a brief outline of our methods of examination and show you how we come to our conclusions.

1. The Subjective symptoms.
2. The Objective symptoms.
3. The Hearing Tests.
4. Laboratory studies and findings.

1. SUBJECTIVE SYMPTOMS:

A full detailed history is most important. I have always made it a practice to allow the patient to speak for her or himself. My reason for doing this is not to influence the patient by my questions. Once the patient's little speech is completed, I filter the conversation and try to boil it down to a few essential points. I find this procedure most helpful. Each patient has his own little story and if not disturbed will almost in chronological order deliver the history, and by secondary questioning certain points can be obtained which will clear the history in its different phases. Now let us analyze what we may learn from the local subjective symptoms.

(a) *Pain* (It is commonly known amongst the laity that ear pain can hardly be exceeded in severity by any other pain in the body), its onset, duration, type, whether lancinating or dull, permanent or intermittent, whether worse during the day or at night, location (either over the auricle, tragus or postauricular region. This is especially important in adults from whom a reliable history can be obtained).

(b) *Discharge or otorrhea,* time of onset, duration, character and quantity of discharge, and cessation of discharge.

(c) *General subjective symptoms:* From the general history, we can determine the primary disease, whether it be an acute infection, the exanthemata or an ordinary rhinitis, tonsillitis or traumatic otitis media. It is also important to learn the date of onset and any other of the general symptoms that might have been present during the initial attack.

During my years of practice, I have had quite a few cases, which I will quote later, of patients afflicted with acute infectious diseases, whose temperature rose during the progress of convalescence, where the fever was overlooked by the family physician. He explained the symptoms as due to a recrudescence of the primary infection and it was not until the family became alarmed and various consultants were called, that the atypical "mastoid" was found.

2. OBJECTIVE SYMPTOMS:

(a) *Examination of the ears* to determine whether there is any discharge, character of discharge and quantity of discharge. If there is a great deal of discharge, we know it must come from some source other than the middle ear. Under the character of discharge, we must note whether it is of mucoid consistency, as this probably denotes eustachian disease. The other secretions vary in color, consistency and quantity.

(b) *Ear drum examination;* location of the perforation. Central perforation is invariably spontaneous. Perforation in the inferior quadrant is often significant of necrosis along the jugular bulb. A perforation in Shrapnell's membrane is suggestive of necrosis in the attic. Resiliency of the ear drum, whether tense or relaxed, is especially important to note. When there is relaxation in the superior posterior portion (membrana propria) or a nipple-shaped ear perforation with a history of repeated paracentesis, in our experience we have always found it to be a precursor of mastoid disease. Also note whether the middle ear secretions are under tension. If so, it means either that the pus is too thick, the secretions are over abundant, or the opening in the ear drum is too small to accommodate the drainage of pus.

(c) *Postauricular examination:* (1) On inspection, examine the position of the auricle for any displacement and compare it with the normal ear; also examine the postauricular folds. This is best accomplished by counting the folds on the normal ear and comparing them with the diseased side. Normally there should be at least two or three postauricular creases. We should at this time note whether any facial palsy is present.

(2) Palpation: Determine whether there is free mobility of the skin and periosteum over the mastoid; whether there is any thickening of the tissues overlying the mastoid. It is also important to determine the tender points, such as, over the antrum, tip of the mastoid, emissary vein, or over the zygomatic ridge. Determine whether the pain on pressure is superficial or deep. In the acute mastoiditis the pain is superficial, while in the atypical mastoid the pain mav be either deep or superficial. We have learned from the number of mastoid operations performed under local anesthesia, that once we have incised through the skin and the periosteum

there is absolutely no pain. Therefore, during the onset, the tenderness is superficial and is due to a periostitis. Once the acute symptoms have subsided and the periosteum becomes thickened our pain becomes deep-seated instead of being superficial.

In infants the symptoms are objective. I have made it a practice to undress the babies completely. No infant is happier than when completely undressed, allowing free mobility of the upper and lower extremities.

I begin palpation in a remote region of the skull, observing at the same time the various facial expressions and limb movements of the infant. I gradually approach the suspicious area, palpating at first lightly and noting the infant's responses. We soon hear an outburst of cries with exaggerated contortions and mechanical movements of the child's hands towards the affected ear. If both sides are affected, there will be a confusion of muscular movements with an attempt to pull the physician's hands away.

A few rules to bear in mind: Pain over the emissary vein is a positive indication of mastoiditis.

Pain over the zygomatic region, when furunculosis is excluded, means mastoiditis, especially in children. This, in my experience, I found to be true in about 60 or 70% of cases.

Antrum pain is practically always present when the acute symptoms are prevalent and is of no significance during the early stages of otitis media.

3. HEARING TESTS:

Whisper, spoken voice and tuning forks: A diminution of hearing is important and requires careful watching before organization of the fibrinous exudate takes place, which causes fixation of the ossicles and results in permanent obstructive deafness. We know that the Weber will lateralize to the bad ear in any obstructive deafness.

Recently a new tuning fork test was called to my attention by Mackenzie, which holds true, especially in adults, where there is a great deal of destruction of the mastoid cells, with fluid present. The Weber is lateralized to the side affected, but is diminished a few seconds (2 to 4 seconds) and at the same time the Schwabach is also diminished a few seconds. The paradox in this test is that the Schwabach indicates nerve deafness while the Weber points to a conductive deafness. This phenomenon the observer attributes to the fact that the liquid substance in the mastoid cells is not so good a conductor of sound as the normal air filled cells. This test should therefore be employed as an aid in obscure cases.

The general symptoms of the patient are as follows: Listlessness, torpidity, haziness of the conjunctiva, indisposition, ashen colored complexion, coated tongue, a pitiable face, and a general appearance of a low grade toxemia. The temperature may be normal and often it is about 99 to 100 degrees, but a great deal of stress should not be placed upon it. We have, however, some subjective symptoms under this heading, such as impaired hearing, tinnitus, insomnia, a feeling of fullness in the head, pain more marked at night and provoked during the atmospheric changes and general indisposition that we must heed.

4. LABORATORY STUDIES AND FINDINGS:

Examination of the smear should be made immediately after the paracentesis to see if the streptococcus mucosus is present. This is significant of mastoiditis, although a few atypical "mastoids" that I have had during the last year, revealed a streptococcus hemolyticus infection.

A high leukocyte count is significant of vital resistance, but the differential blood count is important, especially the polymorphonuclear leukocyte. The high percentage of the polymorphonuclear leukocyte count is significant of the severity of the infection.

In a study of twenty-five cases of blood relationship, I found that when the total leukocyte count was diminished and there was an increase in the polymorphonuclear percentage, the mastoid should be viewed with caution.

X-ray report: I find that the x-ray report is a most valued asset in the diagnosis of mastoid diseases, especially the atypical form. It is an important factor to know the x-ray man and the angles from which he photographs, and often we must be frank enough to ask him for a re-photograph if we are not satisfied with the plates.

I have always made it a rule not to read the report of any x-ray until I have first studied the plates myself, and as I read them I make notations and compare them with the report. It is true that there are many shadows to contend with and various infarcts to be accounted for.

Most of my mastoid work has been done at the Medico-Chirurgical Hospital and thus far our roentgenologic studies have signally aided us.

Different Types of Atypical Mastoiditis

1. Primary Mastoiditis: Baby Evelyn Miller, age 15 months.

I was called in consultation by Dr. Lashman of Camden, N. J., 4-18-22. The history is as follows: On 4-11-22, baby took sick with tonsillitis and grip. On 4-15-22, throat condition cleared up, but the temperature was still persistent. April 17, 1922, Dr. Lashman noticed a postauricular edema on the left side, with pain upon manipulation. April 18, 1922, I examined the baby and found a bulging in the posterior superior wall. The baby was immediately taken to the hospital and was operated upon the same evening. Operation revealed a small perforation in the cortex. When the cortex was removed, there was a cavity, with complete destruction of the mastoid cells. The blood clot method was employed. Recovery was uneventful and the patient was discharged from the hospital at the end of the eighth day, and on the eleventh day the bandage was removed. On May 2d, I was again called by the family physician to see the baby, as he noticed a postauricular swelling of the right side. Examination of the right ear drum was negative. The child appeared healthy and playful. She was only cranky during the night. I sent the baby into the Polyclinic Hospital and mastoidectomy was performed May 3d. The leukocyte count was 10,400, the differential count showed polymorphonuclears 68%. Bacteriological report was staphylococcus albus and pneumococcus. There was a perforation in the cortex. Upon removal of the cortical layer, the cells were completely broken down. After removing the debris, I found an exposed sinus. At no time was there any temperature. The child made an uneventful recovery.

This is a typical "primary" case which belongs to the group of atypical "mastoids" where there was no discharge from the ear, and no middle ear symptoms in the right ear, although there was a congestion and luxation of the left ear drum, which was incised at the time of the operation. There are many theories explaining this phenomenon. The infection no doubt took place through the eustachian tube, secondary to the rhinitis and tonsillitis. When the symptoms are slight during this period, one is unable to state definitely whether the patient's vitality is at its best and is destroying the microörganisms as fast as they multiply, or if the microörganisms are not very virulent; but we must be alert and cognizant of the fact that such conditions do exist and operative interference must be instituted before general septicemia takes place by sinus thrombosis and brain abscess, as in the case related, where the sinus was exposed and the general symptoms were conspicuous by being absent.

2. Zygomatic Atypical Mastoiditis: Baby Martin Bennett, age 14 months.

When Baby Bennett was seen, he was running a temperature between 101 and 105. He was very restless and had a toxic appearance. Examination of the ears revealed a congested right ear drum with an apparently normal left ear drum. At first there was a swelling on both sides over the temporal muscles around the zygomatic region, which gradually moved downward opposite the tragus, resembling that of mumps. Paracentesis of the congested right ear drum was done and pus found. I sent the baby to the hospital, after deciding that the condition was not mumps, but at the same time taking all precautions. The temperature came down from 105 to 103 degrees and behaved like a typical septic temperature ranging between 99 and 103. The x-ray report was not helpful, although it revealed a haziness over both mastoids, but at no time did it show breaking down of the cells. Three leukocyte counts made ran between 18,000 to 25,000. I knew that I had a sick baby on my hands and something had to be done. On 3-14-22, I operated on the right ear, making the regular postauricular mastoid incision, stripping the auricle forward. To my surprise, I found a fistula through the zygoma anteriorly. The mastoid cortex was removed and a simple mastoid was performed. There was a slight breaking down of the cells. At this time, I decided to operate on the opposite side, although there was no otitis media present. The same condition was found as in the right ear—a perforation in the zygoma anteriorly.

3. Diabetic Atypical Mastoiditis With Facial Palsy: Mrs. M. Moses, aged 68, operation with local anesthesia, scopolamin morphin with 1% novocain.

On 2-1-22, I first saw the patient, who had been treated for the past two weeks for influenza. On the eighth day she developed otitis media with spontaneous rupture. On 2-1-22, the family became alarmed because facial paralysis developed and I was called in consultation by the family physician. I found a profuse aural discharge with complete sagging of the posterior superior canal wall. The temperature was normal. The leukocyte count was 11,000. Operation was performed the same day. I found an adherent periosteum with a thick cortex and complete necrosis of the tip, exposure of the sinus and a dehiscence of the inner plate. The facial palsy cleared up after three days. Bacteriological findings: Staphylococcus aureus, pseudo diphtheria, streptococci and some gram negative bacilli. The complete bacteriology was not worked out, as the test tube broke and we were unable to determine definitely the streptococci and gram negative bacilli. The only complication I had with this case was an infection of the tissues of the neck. There was 4½% sugar present in the urine.

4. Bezolds Abscess With Mastoiditis: Emma Jean Parker, age 3.

On 3-6-22, this child was referred to me, diagnosed as a case of Ludwig's angina. History of the case: During the early part of January, the child developed grip and after a few days the temperature subsided, with the right ear discharging. The suppuration continued until two weeks before I saw the child. The mother treated the child with home remedies, douching, etc. The discharging ear subsided for several days, but after that, the child began to ail and developed a temperature of 99 to 101. On 3-1-22, the mother noticed a slight swelling of the neck, which became progressively worse. On 3-6-22, I was called to see the child about 1 a. m. The child at this time had a temperature of 105 degrees. Examination of the ear drum revealed a blurring of the landmarks with a slight tendency to sagging of the posterior superior canal wall. The perforation had apparently healed, as no sign of it was visible. There was a loss of the postauricular folds and tenderness on deep palpation. Upon examination, I found a large mass extending from the tip of the mastoid along the angle of the jaw under the right side of the inferior maxilla, but upon palpation I did not find the typical hardness of the floor of the mouth. The history of this case is extremely interesting and important. We see that the initial stage antedated a suppuration of several months' duration, which suddenly ceased and apparently the ear condition cleared up. Several days afterward the swelling in the neck developed. Here we had a true Bezold's abscess which did not develop until the middle ear stopped discharging. The pus which was under tension was still forming and followed the line of least resistance, and perforated through the tip of the mastoid into the tissues of the neck.

Operative findings: I found a thickened periosteum, a complete breaking down of the cells, with a perforation at the tip and a perisinus abscess. This patient made an uneventful recovery after the mastoidectomy was performed, but we had difficulty in clearing up the infection in the neck. The child was in the hospital for six weeks. The bacteriological findings from the mastoid were staphylococcus aureus and albus, with the pneumococcus as the predominant organism.

5. Atypical Mastoiditis With Loss of Hearing: Miss Betty Cooper, age 19.

On 3-1-22 I was called to see this patient. She had an acute maxillary sinusitis on the right side, which I drained and cleared up. Examination of the ears revealed a chronic suppurative otitis media on the left side with granulation tissue and practically a complete loss of hearing. At this time she complained of vague pains in the right ear with a feeling of fullness and slight impairment of hearing. I saw her daily, decongesting the nasal mucous membrance and applying shrinking solutions around the eustachian tube. Although the pain subsided, the fullness in the ear and impairment of hearing became progressively worse. There was complete loss of whisper and only 1½ to 2 feet of spoken voice. She complained of dull headaches over the right side and pain over the temporal region, and worried about the loss of hearing in the right ear, which previous to this ailment was the good ear. The right ear drum at no time showed any pathological changes. Fork tests: Loss of air conduction, Weber lateralized to the right and diminished 4 seconds as compared with my Weber, Schwabach diminished 6 seconds as compared with my ear. The temperature was normal, leukocyte 9,000, polymorphonuclears 85%. The patient looked sick and had a sallow toxic appearance; there was a loss of luster in the conjunctiva and a coated tongue, significant of a low grade infection. I found pain over the right mastoid on deep palpation and only one postauricular crease was present. There also was immobility of the skin and periosteum. X-ray examination revealed almost complete destruction of the right mastoid cells.

Operation: Thick periosteum very adherent with thick cortex and complete breaking down of the mastoid cells, substantiating the x-ray findings. I was unable to find the antrum and closed the wound by the blood clot method without any drainage. She made an uneventful recovery. On the third day, when the bandage was removed, she was able to hear a whispered voice at 2 feet and a spoken voice some 5 or 6 feet away. She now has perfect hearing in the right ear.

6. Atypical Mastoiditis With Intestinal Disturbance: Libby Pawnzer, age 15 months.

This child, when first seen, had a temperature of 104. She was very restless, groaned and looked ill. There was a history of intestinal disturbance with flatulence. One week previous to this date the baby was seen by a pediatrician who incised the right ear drum but there was no discharge. Five days later the left ear opened spontaneously. Examination of the ears revealed a sagging in the posterior superior canal wall of the left ear, with profuse discharge. The right ear drum revealed a linear incision with a thin serous discharge. I watched the baby for four days consecutively, without abatement of the symptoms. On 3-22-22, a postauricular examination disclosed one crease on the left side and 2½ creases on the right side. The baby was completely undressed, as described in the early part of the paper. I found that there was a slight thickening of the periosteum, and immobility of the skin over the left mastoid. I sent the baby into the Medico-Chirurgical Hospital and ordered both ears x-rayed, the reports returning negative. The pictures showed the semicircular canals in situ. The leukocyte count was 25,000. The mastoids were rephotographed three times and at no time could we make a definite diagnosis from the x-ray readings. I did, however, note that on palpation, especially on deep pressure over the left mastoid, the child made an attempt to pull my hands away, and her cries and contortions became more aggravated. On 3-25-22, although at this time there was some slight tenderness over the right mastoid, I decided to open the left mastoid and found it to be completely broken down. The temperature subsided and on the fourth day it reached normal. On the eighth day, I found both ears completely dry. The baby was discharged from the hospital 4-5-22. On the 15th of April, I again was called to see the baby, who was being attended by a pediatrician for the past five days, treating the intestinal tract. The same history of intestinal disturbance with flatulence was given and all our efforts were concentrated towards the intestinal tract.

Examination of both ears: I found the left ear dry and the mastoid wound clean. The right ear drum revealed a scar from the previous incision. *Postauricular examination:* There was no displacement of the auricle but there was a smoothing out of the folds, leaving only one-half of the postauricular fold intact. I saw no urgency to return the baby to the hospital, as our x-rays were negative. We did, however, find some tenderness over the mastoid, especially on deep palpation over the antrum and at the tip. The leukocyte count was 15,000 and the differential was 80% polymorphonuclears. With a low leukocyte count and high differential cell count, and with a history of previous suppuration and sudden cessation, a loss of postauricular creases, tenderness on deep pressure, and with a previous hazy picture of intestinal disturbance, I felt that we should not lose sight of the fact that the right mastoid might be involved. On 4-20-22, I ordered another x-ray of the right mastoid. The cellular structures looked blurred but there was no evidence of any breaking down. There was no history of any chills, but the temperature continued to range between 100 and 104. On the 26th, I again met the pediatrician and we went over the case together, and after a long conversation we decided that the flatulence, although it persisted, was not enough to explain the toxic symptoms that the child presented. We decided to operate on the right mastoid. The leukocyte count was 15,000 and the polymorphonuclear was now 80%. A postauricular incision was made and I found the periosteum thickened and adherent. There was a thick cortical layer which I removed. I found the pus under tension and the mastoid completely broken down. The baby made an uneventful recovery. This patient taught me a lesson that the clinical picture should stand primarily, and that we should not always depend on an x-ray, especially when it is negative.

7. Atypical Mastoiditis With Pain Over Emissary Vein: Morton Mazer, age 9½.

This boy is the son of a physician. He had an acute rhinitis for one week. On 5-4-21, I was called in to see him and learned that he had a temperature ranging from 103 to 104, with pain in the ear for the past three days. The examination of the ear revealed a bulging drum which I incised, finding pus. I found that on palpation there was pain over the emissary vein at the posterior extremity of the occipital groove. The fever continued for several days. The pain was quite noticeable on pressure over the antrum, but the pain over the emissary vein was most marked. X-ray studies were made. There was no distinct breaking down of the cells but there was a slight blurring. I told the father that this mastoid must be looked upon with suspicion on account of the pain over the emissary vein. On the sixth day, 5-10-21, the temperature and the mastoid pain subsided, the ear discharge slackened somewhat, but the emissary tenderness still persisted. On the eleventh day, 5-15-21, the temperature again rose, the pus thickened, and the pain over the emissary vein became more severe, although there was no other pain over the mastoid area. I reincised the ear drum to promote drainage and in 48 hours the symptoms subsided, except for the pain over the emissary vein, which was persistent. For two weeks the temperature was normal, the discharge lessened somewhat, and it looked as though the boy would recover without any operation. The temperature suddenly jumped to 104 and remained so for three days. Ear examination showed that there was ample drainage from the middle ear but the tenderness became more diffused throughout the mastoid and the emissary tenderness still remained uppermost. I called Dr. Coates in consultation and we decided to operate. After removal of the cortex, we found severe congestion of the cellular structure, with only small droplets of pus. There was, however, a small cell of pus near the emissary vein. We also found a dehiscence of the inner plate.

We have had several other cases with pain over the emissary vein and every one which came to the operating table revealed true mastoiditis.

SUMMARY

1. A thorough history of the case is essential because we will learn the date of onset, suppuration if present, type and location of pain, and if pus had been present, its date of cessation. It is important to know whether paracentesis was performed, and if so, how many times it was done, as three or four ear drum incisions should be looked upon with suspicion as indicative of mastoid involvement.

2. One should note whether the patient has any facial palsy, the position of the auricle, whether there is any fullness over the mastoid area, and closely observe the number of postauricular folds. (In the aged it is interesting to note the difference between the diseased side from the normal. You will observe that the diseased side will reveal a distinct smoothening of the furrows, while the normal side will be wrinkled.

A thorough examination of the middle ear, noting the quantity of pus, is most important. We know that whenever there is a great deal of pus present, it must come from some other source than the middle ear and that must be the mastoid. Observe the site of the perforation and resiliency of the ear drum. A nipple-shaped perforation, with sagging of the posterior superior canal wall, suggests mastoid involvement.

3. Observe the tender points, such as, over the antrum, zygomatic region, tip and over the emissary vein. Also, ascertain the mobility of the skin and periosteum over the mastoid.

4. A progressive loss of hearing, with the history of otitis media, with or without suppuration, with vague pains over the mastoid, thickening of the periosteum over the mastoid, immobility of the skin and loss of postauricular folds should be watched carefully.

Significance of the Leukocyte Count: A high total leukocyte count is of no importance. It simply suggests resistance of the individual to the infection, unless some intracranial complications take place. A differential blood count with a high polymorphonuclear leukocyte count is pathognomonic of bone destruction and should be watched cautiously.

6. The x-ray is a great asset in our diagnosis of mastoid disease, but negative reports should be disregarded when the clinical symptoms are pointing towards mastoid involvement.

When children are radiographed, I always suggest to the radiologist that a few whiffs of chloroform be administered, so as to obtain good pictures.

In closing, I wish to say that I hope that I have pointed out some of the most prevalent symptoms present in atypical mastoid conditions. I am sure that as long as mastoids continue and atypical mastoids prevail, there will undoubtedly crop up signs and symptoms not yet observed.

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DISCUSSION

Dr. John J. Sullivan, Jr. (Scranton, Pa.): The method of examination as described by Dr. Ersner is so thorough and comprehensive that nothing need be added in the discussion. I am very much interested in his test. It is a new one to me. The diagnosis is brought about by one's clinical experience. For many years, I spent time looking up symptoms in the books, but I never seemed to find the point. Dr. Ersner is fortunate in having so many cases. I only recall having seen one or two atypical cases in an experience of several hundred mastoiditis cases. There was one which I thought especially interesting. A little girl, aged 12, came to the dispensary complaining of very severe pain over the right mastoid. Ear drums normal. Hearing distance normal. The question of hysteria came up. I asked her, had she had running ear recently and she said yes, she had had it three or four months before. The x-ray showed blurring, and at operation, a mastoid filled with pus was found. This was the only real atypical case that I have ever seen where there was absolutely no sign of the mastoid condition, outside of the pain.

Another case which I had a few days ago was practically similar. I saw this case with Dr. Cross of Scranton. A girl had had running ear several months previously, with a slight discharge. X-ray negative; symptoms negative. You could not call it mastoid. I thought I would go over her sinuses and found pus at both antra of Highmore. Both antra were full of pus and polypoid tissue. As I was going to close her up I noticed a red spot in back of the antrum. I kept scraping and found a double antrum maxillare. The pain absolutely cleared up, although she had a lot of pain over the emissary vein.

Another case of a boy came to the West Side Hospital. He had swelling in the neck. I was very much in doubt as to his trouble. This was some 15 years ago. There was no tenderness over the mastoid. No pain but the swelling in the neck. Family physician said he had had discharge from the ear several weeks before. On opening him up, we found an abscess, and a lateral sinus thrombosis. About 10 days after the primary mastoid he began to complain of severe temporal aural pain. No temperature, but on account of the persistency of the pain, we opened him up and cerebral fluid squirted out under pressure. We exposed the dura-cerebella and the same thing occurred. We could find nothing to account for the pain. We exposed his lateral sinuses, and found complete thrombosis. We ligated the jugular vein and found it thrombosed for three inches. He was sufficiently recovered to drain the cerebral fluid five or six days afterward.

Dr. George W. Mackenzie (Philadelphia, Pa.): The subject which Dr. Ersner brought out in his paper is most important, for the reason that it is this class of cases that frequently comes to a fatal termination without the general practitioner or even the specialist recognizing the condition. I think he is to be complimented on the manner in which he has presented the subject. I do not hope to add much to what he has said. However, if I may be permitted, I should like to bring home one or two points.

Atypical mastoids are those in which we find little or no external swelling over the mastoid, little or no tenderness over the mastoid, frequently the absence of history pointing toward middle ear suppuration, and an intact membrane. Notwithstanding, the patient presents more or less vague symptoms of intracranial complications. The reason the membrane remains intact is frequently due to the character of the infection. The streptococcus mucosa infection is insidious; the infection goes up the eustachian tube rapidly, progressing through the middle ear cavity to the mastoid without making much impression in the middle ear itself. The external corticalis of the mastoid is found to be relatively thick in these atypical cases.

In spite of the handicaps it is possible to make a correct diagnosis. The tympanitic membrane is sufficiently translucent normally to permit one to see the posterior half of the hammer handle. When we find a membrane that appears frosted, looking somewhat like salt water, the long process of the handle is no more visible and the hammer handle presents a narrow appearance. Normally, we find the posterior margin of the hammer handle fairly well defined. When, however, the membrane is opaque, the posterior margin is poorly defined, for the reason that the posterior half of the hammer handle lies behind the membrane while the anterior is in intimate contact. If there is fluid behind the membrane, we lose the perceptibility of the posterior margin of the hammer handle.

Another thing which is worth emphasizing and which is probably one of the most consistent findings in mastoid is the sagging of the posterior superior wall of the external auditory canal. It is well to remember that the membrane is continuous with that curve of the posterior superior wall of the canal. The slightest periostitis causes some swelling, and if one will examine ostoscopically, he will find, instead of the continuous curved line, an angle where the swelling of the upper wall of the canula meets the superior portion of depression periphery of the tympanitic membrane.

Dr. Clinton J. Kistler (Lehighton, Pa.): I did not intend to say anything in this discussion, but as I listened to Dr. Ersner's description of his method of examination and diagnosis I felt that his paper should be brought to the attention of general practitioners. My special reasons for thinking so is the experience of a good many years ago when I was doing anatomical work in Berlin. When I got to Berlin the regular sources of anatomical material asked such terrific prices that my finances would not stand it, so one day I told my troubles to Professor Virchow at the Pathologic Institute and, in his usual gracious manner, he said that I was welcome to come there and work in the cellar under the lecture room without any charge, except to satisfy the attendants. My colleague and I worked in that cellar every afternoon for several weeks and when I think now of the way we butchered up material it makes my heart sick. We had at least fifteen or twenty infants on the tables practically all the time. After opening their mastoids and examining their middle ears, with very few exceptions we found pus, when there was no external evidence whatever to point to such a condition, and I wondered what could have been the conditions before death or the causes of death, when such a large proportion showed this postmortem condition. I felt that somebody must have missed something, and since hearing this very exceptional paper of Dr. Ersner's I can understand the situation better.

This is what makes me urge that this paper, in some way, be brought very prominently to the attention, not only of specialists in this field, but to the family doctor who first sees these very puzzling and obscure cases. I felt in Berlin that, perhaps, not all of these children should have come to the postmortem table, and I feel now that we have much less excuse for overlooking the middle ear and mastoid in these obscure cases of fever in children.

Dr. W. H. Sears (Huntingdon, Pa.): I had not expected to discuss Dr. Ersner's excellent paper or I would have brought records of some atypical cases of mastoiditis seen during the past one and one-half years. As it is, I will report briefly from memory, three cases which are of interest.

The first, a boy of 12 years, was seen by his physician, riding about apparently in perfect health, on his velocipede. Noting a swelling over the mastoid region, he sent him to my service in the hospital.

Examination showed a considerable swelling over the mastoid; this seemed to fluctuate slightly on pressure. A history was elicited of swollen and tender cervical glands ten days previous, for which the family physician had prescribed; otherwise negative. The swelling had begun shortly after the tender glands had been noted and had gradually increased in size. At no time had there been pain in the middle ear or elsewhere, nor had the hearing been affected. Temperature, pulse and respiration were normal. Urine negative. The external auditory canal and tympanic membrane showed nothing abnormal, while the nasal fossa, postnasal space and pharynx were uncomplicated by disease. Hearing was normal. The diagnosis seemed so positive of an uncomplicated postauricular abscess, which required nothing more than incision and drainage, that neither an x-ray picture was taken nor was a blood count made.

Incision of the abscess revealed very much thickened tissue with almost no pus until the cortex was reached, when a perforation was found. The mastoid cavity was filled with granulation tissue and a moderate amount of pus, while the plate overlying the sinus had been necrosed and the sinus was bathed in pus—a perisinous abscess. The boy made an uneventful recovery.

Case number two, a young woman of 16, six weeks before I saw her had a severe head cold, followed by acute follicular tonsillitis, which was complicated by a middle ear suppuration. The tympanic membrane ruptured spontaneously and after a few days the purulent discharge gradually lessened and ceased in about a week.

She had returned to school in apparently normal health, when about four weeks later a small swelling developed over the mastoid region. She was referred to me by the family physician a few days after this. The swelling over the mastoid was small and did not fluctuate, nor was pain elicited by pressure over the cardinal points. The external auditory canal was normal. The tympanic membrane was somewhat dull, but it and the ossicles were mobile. Incision developed no sign of pus or catarrhal secretion. Her temperature, pulse and respiration were normal. However, an x-ray plate showed mastoiditis.

On opening the mastoid, the entire cavity was found broken down and filled with graulation tissue and pus, and another perisinous abscess uncovered. This patient likewise made an uneventful recovery.

The third case was a young woman of 27, who had been ill for several weeks with an influenzal cold. One afternoon about three o'clock she had severe pain in the left ear. Late in the evening pain in the mastoid region developed, and next day she had severe pain all through the left side of her head. At this time, I was called in to see her. She had all the symptoms of severe acute mastoiditis, i. e., bulging tympanic membrane with profuse flow of pus, posterosuperior wall broken down, etc. I operated at once, finding pus under much pressure, the mastoid cavity filled with granulation tissue and a perisinous abscess. This patient made a good recovery with a protracted convalescence.

The point of greatest interest is that, from the patient's standpoint, the first case had no definite symptoms of mastoiditis, the second but few, while the last was a fulminating mastoiditis; yet, on operation, all three presented largely the same pathological findings.

Dr. James A. Babbitt (Philadelphia, Pa.): I think this paper is very valuable and very well presented. The study of focal infection has become almost a department of medicine. We have not placed mastoids in the same relative importance to internal toxemias as we have the adenoids. Those who first call attention to the pain and tenderness are not paying sufficient attention to different blood pressure and count not only for leucocytes and polynuclears but also for lymphocyte changes, which give considerable information as to the existence of focal infection.

There is one other point: Dr. Coates made a remark which has been of comfort, at least to me, in this battle which is going on among us between conservative treatment and prompt interference with mastoid trouble. In an operation to discover and remove a foreign body he called attention to the very marked difference in the normal mastoid contents and in any condition where we find a pathological change. So many of us have condemned ourselves for getting into a mastoid promptly and finding little apparent trouble in the mastoid itself, while we have often let alone a mastoid which produced serious after results. His observations were of very great comfort to me.

Dr. Benjamin Shuster (Philadelphia, Pa.): I just want to say a few words about the title of the paper. It is listed as "Intuitions." I think Dr. Ersner is modest in calling it this, for if you will read carefully the latter part of his paper he will give you the points by which he makes his diagnosis and you will see that it is not "intuition." "Intuition" implies that the man just struck the diagnosis; and that is not so with him. He went over all the different points in making the diagnosis.

About atypical mastoiditis: if I could rewrite the textbooks I would rewrite the entire chapter on mastoiditis and would do away with the typical signs and symptoms. I would make it analogous to a case of pulmonary tuberculosis. You can have a frank hemorrhage and a chest full of râles and make the diagnosis of tuberculosis; on the other hand, the careful chest man will diagnose it in the incipient stage before the symptoms are present. The same thing applies to mastoiditis, and instead of typical and atypical mastoiditis I think it should be incipient and frank mastoiditis and should classify the typical mastoiditis in the category of advanced mastoiditis. When we get a typical textbook mastoiditis and the posterior parts of the skin are already bulging, sometimes, if let alone, it will drain itself. On the other hand, some of the most serious complications are found in cases of atypical mastoiditis.

I recall one little boy coming in with pain around the ear. I noticed that the furrows behind the ear were all gone and that there was very slight tenderness and a little fever, with some discharge. Ordinarily, this would not make a diagnosis of mastoiditis, but I felt that it was, and sent him over for operation. The patient had vomited once and I had also thought of thrombosis. At operation we found that the child had sinus thrombosis. No typical signs were present; yet the child was in a grave condition. I would designate as *typical* signs all the things mentioned by Dr. Ersner and not as *atypical* signs. The classical textbook signs should not be waited for to undertake surgical procedure.

Dr. Ersner (in closing): I wish to thank everyone for participating in the discussion of my paper. Dr. Babbitt's remarks about focal infection make me recall seeing a case several years ago at the Pennsylvania Hospital. The patient suffered with acute articular rheumatism and gave a history of otitis media of many years' duration which suddenly stopped discharging. Upon examination I found a small area of calcareous infiltration on the ear drum, and after manipulation the calcareous mass was dislodged and free pus was exuding. I feared that I was stirring up some acute otitic disease but in several days the articular rheumatism cleared up.

Dr. Babbitt also brought up the question of blood examination. This brings to my mind a case which I saw about a week ago. The x-ray report of Dr. Pfahler was sclerosis and some haziness with loss of cellular structure, but when I sent the child for blood studies the picture was just the reverse. Ordinarily we would expect a low leukocyte count, which was not present. The leukocytes were 10,000 and the differential showed 61 per cent polymorphonuclear leukocytes. Any acute inflammation will give you a high polymorphonuclear count, but this went on for several months' duration, and that explains the leukocytosis with a low polymorphonuclear and a high lymphocytic count.

THE VALUE OF TEST MEAL STUDIES*

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The position on the program assigned to this paper, together with its title, would seem to make for a bromidian presentation. In the matter of arranging the program, we of course, had no part; and as for the rather hackneyed subject, we offer no excuse except that many phases of modern medicine require from time to time thoughtful review and proper evaluation. Ever since Kussmaul, in 1871, suggested gastric intubation as a diagnostic procedure, the literature has been filled with testimony for and against this method. To begin with, it seemed to be a most rational mode of investigating stomach disorders; and there was a tendency to attach very certain diagnostic conclusions to the findings. As time passed a proper estimate was placed upon test meal studies, and it became evident that such investigation in conjunction with careful history taking, good physical examination and other laboratory methods afforded only an aid and not absolute evidence in the diagnosis of gastric disease.

There were those who failed to get this viewpoint and were therefore quickly discouraged when they found a certain percentage of discrepancies between gastric content evidence and operative or postmortem findings. With this apparent unreliability of test meal studies there also came for many the difficulties attendant upon the use of the old stomach tube. Gradually, then, stomach analyses became less and less the practice. During this time of trial, various types of test meals were suggested for different diagnostic ends. Coupled with these are the names of Ewald, Boas, Riegel, Salzer, Fischer, Sahli and others. Out of the whole matter, it developed that the meal of Ewald and Boas, consisting of bread and water, answered best the needs of gastric diagnosis. The severest setback for the test meal technique came with the use of the x-ray method of studying the gastro-intestinal tract. Roentgenological examination of the stomach seemed to answer almost all the purposes of stomach intubation and in addition gave accurate evidence not obtainable by the other method. As a result, many abandoned gastric analyses altogether. Some have never gone back to the practice, while others have again resumed such studies in their routine case work.

An added impetus was given to the test meal idea when Rehfuss, by means of many contributions to the literature, popularized the use of Einhorn's duodenal capillary tube for fractional gastric studies. This method, now widely used, consists of administering an Ewald meal and subsequently extracting 10 c.c. portions of the gastric contents every fifteen minutes until the stomach is empty. Each 10 c.c. portion is examined microscopically, chemically and for enzyme activity. By the utilization of the acid titration and pepsin activity figures in plotting curves, the progress of chemical and enzymic changes can be graphically represented. For this technique, it is claimed that accurate information is obtained concerning gastric work during the entire digestive period. Gradually, from various sources, work has been done which shows that the method offers very little diagnostic information not to be obtained by the one-hour extraction technique. On all sides efforts have been made to correlate types of acid curves with specific gastric dysfunction or lesions. No one has been able to say, however, that one type of curve is, for example, constantly found in gastric ulcer and another type in carcinoma. One of the objections offered against the older method was that it might not yield information concerning the exact height of gastric secretion. It was contended that the highest titration values might be obtained earlier or perhaps later than one hour after the ingestion of the test meal. This objection has never seemed to be a particularly important one. Another objection offered to the older method was that the same individual at different times might yield variable results. For the newer method the same may be said. Kopeloff (J. A. M. A., Vol. 78, pp. 404) has pointed out, and it has been our own experience, that the fractional method, too, may yield varying types of normal curves in the same subject on successive trials. Objection has also been made by Mellon (Arch. Int. Med., Vol. 28, 632, Nov., 1921) and by Gorham (Arch. Int. Med., Vol. 27, 434, April, 1921) to the assumption, if not so stated, then implied by the fractional method, that the gastric contents are a homogeneous mixture. Physiologists long ago pointed out the variable acid values obtainable in different parts of the stomach. This fact makes it seem unlikely that fractional curves are indicative of the secretory function of the whole stomach. Investigation of 10 c.c. portions of the gastric contents at any given time does not tell us a true story. Fractional analyses do, however, differentiate for us real cases of anacidity and achylia gastrica from so-called spurious ones. From all of which it would seem that for clinical purposes we still have not gone much beyond the older single extraction method, which is supported by the experiences of many men for many years.

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The older method, as all must remember, also utilizes the Ewald-Boas meal of bread and water. Variable amounts of the latter are used by different workers; but it would seem that two glasses, or about 500 c.c., is the average amount. Two slices of bread are given and the whole extracted in one hour. The amount of gastric contents obtained should be accurately measured, and a microscopic examination should be made of the gastric sediment. The amount of free hydrochloric acid and the total acidity should be determined by titration against a decinormal sodium hydroxide solution. Whenever it is possible to do so, patients should present themselves after an overnight fast. This enables one first of all to extract the fasting contents. We have been in the habit of suggesting the intake of four charcoal tablets on the night previous to examinations. Einhorn's duodenal tube is the preferable one to use. It is easier for the patient to take and insures a more thorough emptying, with little danger of traumatism. The charcoal is easily aspirated through the small perforations in the tip and is easy of recognition. Its presence in the fasting contents indicates an overnight retention. Anything much coarser than charcoal tends to clog the tube. After the fasting contents have been obtained, the bread and water meal is given to the patient.

At the very least, any gastric investigation should aim to determine whether or not a patient's difficulty is intra- or extragastric in origin; and if gastric whether of an organic or functional nature. The presence of an excessive amount of mucus, the findings of pus, blood, and very, very rarely of other morphological elements in the gastric contents, almost certainly points to an intragastric organic lesion. A clean gastric return usually indicates an extragastric origin for stomach dysfunction. Mucus alone is associated with chronic inflammations of the stomach, while pus, blood, and microörganisms are found in ulcer, carcinoma, syphilis and some rare lesions of the gastric mucosa. The presence of pus, blood and mucus from the respiratory tract must be ruled out. The fasting gastric contents afford an especially good opportunity to search for these various pathological elements. In the absence of any such abnormal findings, if there remains a suspicion of an organic gastroduodenal lesion, then a positive occult blood reaction in the feces, after a three-day meat free diet, will tend to support such a diagnosis. Overnight retention of food elements or the charcoal, if the latter is used, points very strongly to some pyloric obstruction, either of intra- or extra-gastric origin. So much of the findings by gastric intubation warrants definite conclusion for or against gastric pathology. The remaining information obtained concerns itself with the secretory and motor function of the stomach, and only serves as supporting evidence in diagnosis.

Observations from many sources, using the Ewald-Boas technic, show that most of the normal free hydrochloric acid values fall within the range of twenty c.c. to thirty c.c. of one-tenth normal sodium hydroxide solution per 100 c.c. of gastric contents; while the total acid values range from 40 c.c. to 60 c.c. The acid titration figures may remain within normal limits, even in the presence of organic disease, when other findings may then point the way under these circumstances. No specific diagnoses can be attached to these acid values. There are two occasions when the knowledge of the secretory function of the stomach is quite helpful. One occurs when the question of treatment arises, and another happens when the x-ray examination shows some outline deformity or abnormal peristalsis. In such instances, the careful roentgenologist will often receive much help from the acid figures. He will tend toward ulcer diagnosis, when a so-called hyperacidity exists, and will be inclined to diagnose carcinoma if there is an achylia or a hypoacidity. Normal secretory values, with the report of a clean digestion, may support the diagnosis of adhesions or some other extragastric pathology.

In the matter of gastric motility (gastric content emptying) as with secretion, there seems to be much difficulty in defining normal limits. Generally, the normal stomach empties all except about 100 c.c. of the Ewald meal. On occasions, in symptomless normals, as much as 400 c.c. is recovered. Nevertheless, if much over 150 c.c. is aspirated, it may be concluded that we are dealing with hypomotility. The opposite condition, hypermotility, is usually found in a group of subacid and achylia gastrica cases, some duodenal ulcers (usually with hyperacidity), linitis plastica, and certain hypermotile stomachs of functional type. Mild delay in emptying may occur in atonic and ptosed stomachs. A greater degree of hypomotility occurs in gastric ulcer or carcinoma of the pylorus, hypertrophy of the pylorus, peripyloric adhesions or tumors, pylorospasm, tumors of the head of the pancreas, duodenal adhesions, hourglass organically constricted stomachs, and occasionally in ascites and abdominal tumors. Generally speaking x-ray studies shed a better light on gastric motility than do test meal procedures.

Not all of us, however, have easy access to good x-ray interpretation, and for many patients, this examination becomes an economic hardship. It is, therefore, important to determine whether or not barium meal studies should be made in our patients. The best indicator we have for necessary x-ray investigation is found in the story of the test meal. In a series of cases in which test meal evidence plus other studies indicated the likelihood of some organic lesion, over 80 per cent were shown by x-ray or operation to justify the clinical opinion. It would, of course, be difficult to say how much gastric pathology is missed in non-x-ray cases. The failure to make a therapeutic impression is another splendid indication for x-ray investigation in all gastro-intestinal patients. X-ray examination is not deprecated; it is urged whenever possible; but it requires much experience and great skill in interpretation. In this respect it does not differ from any other investigative procedures, and more especially is this applied to test meal studies.

We have not mentioned many other phases of the subject because we believe that much else in the matter of stomach tube investigation becomes too difficult and uncertain for ordinary use. Such untouched questions involve the matter of gastric bacteriology, the various tests for gastric cancer, gastric syphilis, gastric ferments, etc.

SUMMARY

1. The ease with which test meal studies may now be carried out by the use of capillary tubes, originally suggested for the extraction of duodenal contents, is emphasized. There is little excuse for omitting such tests in patients with stomach disorders.

2. The propriety and absolute need for test meal studies to make for well investigated gastric patients is pointed out.

3. Test meal studies, showing as they do gastric secretion, motility and pathological elements, are of great value in gastric diagnosis. In connection with other findings in our patients they still serve as supporting evidence.

4. The single extraction method is still in order. If time permits there is no objection to the execution of fractional studies.

5. Test meal studies are of value as a therapeutic indicator, and in x-ray interpretation.

6. While not mentioned in the body of this paper, it will be found helpful to inflate the stomach through the duodenal tube. By ausculting over the abdomen and listening for a cavernous puff of air, with perhaps bubbling, the gastric outline may be accurately determined. Sometimes gastric inflation reproduces the patient's presenting symptom, when definite diagnostic conclusions may be drawn.

7. Nothing new or original is claimed for this presentation. The difficulties of gastric diagnosis are appreciated and the variable possibilities for error in such diagnosis, even after x-ray and test meal studies have been made, are recognized.

DISCUSSION

Dr. J. Quincy Thomas (Norristown, Pa.): Dr. Schnabel's paper explains the value of test-meals in the diagnosis of stomach conditions in a very concise and scientific manner. It would be well for anyone who is interested in this work to get the doctor's paper in a printed form, keep it on your desk and refer to it when in doubt, as it will no doubt point out the difficulty which confronts you.

The diagnosis of gastro-intestinal diseases may be divided into four phases, which are: clinical history, physical examination, laboratory findings and x-ray examinations.

One of the most important steps in the study of the gastro-intestinal case is the patient's history. I, personally, consider this as the most important part of the diagnosis and I do not know of any procedure which will give you as much light or as much insight as to the cause of the symptoms as a carefully interpreted history. Furthermore, the accuracy of the pathological diagnosis bears a direct relationship to the clinical history. One should develop a technique for obtaining an accurate and detailed gastric history, just as one may develop a technique for doing an appendectomy. Let me illustrate this point by the following: If a patient complains of abdominal pain one must inquire, first, as to the location of pain, particularly, whether it is diffuse or localized, intermittent or constant, sharp, gnawing, dull or piercing. Does it remain constant in one region? Does it radiate? If so, in what direction; whether toward the back, directly through to the back, toward the chest, lower part of the abdomen, toward the gall-bladder, heart or appendix, or toward the lower extremities? The time of pain is very important. Is it worse during the day or night? What relation has it to eating, to swallowing, to bowel movement, to urination? What relation to the character of food—whether aggravated by sour, sweet, cooked, uncooked, coarse, hot or cold food? Relation to change of posture; for example, is it aggravated by lying down, turning to the right or left side? Does it start frequently before breakfast? If after breakfast, how soon? Does it last until the noon meal? Does eating give relief? If so, how long does the relief last? Does it prevent sleep or does it awaken the patient at night? If so, at what time and how long is he kept awake? What does the patient do to get relief? Does soda give relief?—hot water and hot milk, etc.? By this, one can determine in a great many cases whether the stomach is primarily involved. It is well worth anyone's time to read Boas' book on the "Diagnosis and Treatment of Stomach Diseases," in which he devotes sixteen pages to history taken in gastric diseases.

The next important phase of a gastro-intestinal case is the physical examination. No study is complete without a careful and thorough physical examination. Upon this depends much. We must remember that only about 20% of the patients suffering from gastric symptoms who apply for treatment, have anything wrong with their stomachs. In the 80%, other organs may be affected, in which the stomach indirectly produces the symptoms.

I was very much impressed with the readers of the many papers before this section. Each one tried to impress upon us the importance of a thorough physical examination of the patient, whether trying to make a diagnosis of gastro-intestinal, bone, joint, lung or nervous diseases. If you fail in your diagnosis, the patients can at least say that they have received a good examination.

Test meals and their significance, is the important part of the third phase of the diagnosis which Dr. Schnabel has explained to us to-day. I do not know of any clinical symptoms that are positively diagnostic of the chemical condition of the stomach's contents. We have but one method of determining this, and that is by the use of test-meals and stomach tubes. Every physician and the general practitioner should be skilled in the use of the stomach tube, so that he can determine the gastric acidity and also study the gastric motility. Gastric motility can be accurately determined by the methods which the reader of the paper has given us to-day. The gastric motility is just as important as the acidity, and some clinicians claim the motility is more important than the chemistry of the contents.

The motor activity can be determined by the stomach tube more accurately than by the x-ray. There are certain diseases in which the character of the test-meal is almost diagnostic; for instance, hyperacidity is common in organic lesions of the stomach, duodenum, acute gall-bladder conditions and chronic appendicitis. In anacidity one would immediately think of chronic gall-bladder disease, pernicious anemia and gastric cancer. It is a great mistake to make a positive diagnosis on one symptom or one laboratory test alone. One must combine his entire study before arriving at a positive diagnosis. By scientific use of the stomach tube we are able to prescribe intelligently in gastric cases. Less medicine would be given our patients for indigestion if we knew the motor and secretory activities. Any patient who has been a dyspeptic for any length of time should be given a gastric analysis, and if denied the same the patient is not receiving just treatment. I know of no method as simple in its procedure that will enlighten you any more than the intelligent use of the stomach tube.

The fourth and last phase of the diagnosis is the x-ray study. The general practitioner has fallen into a bad habit in his digestive cases since the development of the x-ray. The x-ray is not the last word in the diagnosis in these cases and this fact should be impressed upon our patients and the general practitioner. Test-meals and gastric analysis do not reveal changes in the form, position, contour or mobility of the stomach, nor are they designed to reveal such changes, which rightfully belong to the province of the roentgen ray. The x-ray examination will overlook the functional changes, such as hyperacidity, achylia and the inflammatory conditions of the mucous membrane which make up a large part of our digestive cases. We must remember that we have more good clinicians than we have roentgenologists. I am not by any means discrediting the use of the roentgen ray in the diagnosis of digestive diseases. In all fairness I must say that the splendid work of the roentgen ray has helped us much in these cases. The fact is that I want to impress upon you that in digestive cases a thorough study of all these four phases is essential in arriving at a correct diagnosis.

Dr. Schnabel (in closing): All I wish to say is that I am very grateful to Dr. Thomas for his sympathetic discussion.

DIAGNOSIS OF PALSIES OF THE EXTRA-OCULAR MUSCLES*

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I simply want to bring before you this little model and try to have you visualize the ocular muscles and their normal function and arrive at a method of making diagnosis in palsies of the extra-ocular muscles.

There are four straight muscles which rise in the apex of the orbit and project outwards. Their action is always complicated and not simple. The oblique muscles are the guide lines. There are few movements of the eyeballs which are similar in action. For instance, when we rotate the eyeball outward there is action of the external rectus, the oblique muscles acting as a guide line. In moving the eyeball inward the internal rectus acts and the superior and inferior rectii remain practically motionless. These hold the eyeball in position to prevent rotation. In moving the eyeball upward the superior rectus acts in conjunction with the inferior oblique, and in moving it downward the inferior rectus, in conjunction with the superior oblique, turns the eyeball down, while the superior rectus relaxes. As a matter of fact it is the inferior oblique which acts when the eyeball is turned in and up.

In any palsies of the extra-ocular muscles, one of the first things resulting is disturbance of the bifocal vision. In the recognition of diplopia we must bear in mind certain things. If the object falls to the nasal side of the retina, we project to the temporal side and vice versa. Of course, in a recent palsy of the extra-ocular muscles it is not difficult to recognize, because there is deformity of the eyeball, but in paralysis of either of the obliques the deformity is not apparent and we must rely on subjective symptoms. As a general rule, the false image is always in the direction of the paralyzed muscle. In a diplopia the two images are separate, the false image falling in the direction of the paralyzed muscle. The oblique muscle relaxes and the eyeball rotates slightly outward. The image in this eye would then not be in the vertical meridian; the image in the vertical line will also be tilted. The top of the image is tilted toward the left so that the false image is tilted toward the paralyzed muscles.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

I will leave it to Dr. Peter to continue the discussion.

DISCUSSION

Dr. Luther C. Peter (Philadelphia): For practical purposes it is best to divide the subject into acute and chronic palsies. The latter group is complicated by contractures and spasm which one rarely finds in an acute paralysis, and the diagnosis, therefore, is more difficult.

In the acute variety, fairly definite conclusions can be drawn from a study of three symptoms or phenomena, namely head and face positions, limitation in rotations and the diplopia field. Of these the field of diplopia is the most definite and accurate, but the study should be made in the order as given.

Head and face positions are not usually given the consideration which they deserve. In the so-called vicarious rotations of the head, there are two distinct components which should be carefully separated. They are face rotations and tilting of the head to the shoulder. The former are reliable and are the true vicarious rotations referred to; the latter is not always reliable, is more frequently observed in the phorias and is not, strictly speaking, a vicarious rotation, but a mechanical aid in diminishing the diplopia.

In lateral palsies, the face is turned toward the paralized muscle and indicates that a right or left rotator is involved. Example: The right external rectus is paralyzed. In order to correct the lateral separation of the images, the face is turned to the right, and the eyes are brought into the field to the left where the right externus operates at a minimum. This is a true vicarious rotation, the function of the weak externus being relieved by placing the eyes in a more advantageous position for bilateral single vision. In the vertically acting muscles the analysis is a bit more complicated because of the double function of the vertical muscles. The face, however, is again turned in the cardinal direction of the normal action of the paralyzed muscle. If an elevator is involved the face turns up and if a depressor, it is turned down. This readily determines the group. As the vertical muscles are either right or left hand rotators as well as elevators or depressors, the face is not only tilted up or down as the case may be, but it is turned slightly to the right if a right hand rotator is affected or to the left if the muscle is a left hand elevator or depressor. The face is turned *toward the maximum vertical pull* of the muscle, or toward the field of greatest vertical separation of the false image from the true. Here again the position of the face points to the yoke muscles, one of which is paralytic.

A careful study of this phenomenon you will find worth while as it rarely fails. Example: right superior rectus palsy.

Shoulder tipping, more frequently seen in the phorias than in palsies, has a twofold purpose. It lowers the right hand image, regardless of the eye to which it belongs, when the head tips to the right shoulder, and the left image when the head tips to the left; second, it corrects the obliquity of the false image. In a careful study of this phenomenon during the last two years, the speaker has found a number of exceptions to the first function but practically none to the latter. The conclusions to be drawn from this study are: first, shoulder tipping is much overestimated as a means of reducing vertical diplopia; second, it is not reliable from a diagnostic standpoint in indicating which is the high image; and third, when present, it is largely in the interests of correcting the leaning of the false image which the paralytic muscle cannot correct. If you wish to determine the relative efficiency of these two methods, in relieving a vertical diplopia, namely by the position of the face and by tilting the head to the shoulder, try the methods on the next intelligent patient who comes under your care, and you will be convinced that shoulder tipping is only supplementary to the former. The face turning brings the eyes into the most favorable position for single binocular vision, the latter is an imperfect attempt to correct the diplopia, with the eyes in a most disadvantageous position for single binocular vision.

The point which I wish to bring to your attention is this: the position of the face is a most reliable symptom in guiding the observer to the associated muscle group in which the paralytic muscle will be found, by a study of the rotations and by the diplopia field. The tilting of the head to the shoulder is less reliable.

Limitation in the ocular rotations: Careful observation of the rotations in the cardinal directions and up and to the right and left, down and to the right and left, will rarely fail to show conclusively the eye which fails to follow and the direction of the same. If the paresis is slight, it is best to make this examination in a dark room and observe the varying position of the corneal reflex as thrown upon the cornea by an ophthalmoscopic mirror as the eyes are rotated by the patient. The relative position of the corneal reflexes in the two eyes is a more delicate test than the simple observation of the ocular movements.

Diplopia field: The diplopia field is the most accurate of the tests which we have at our disposal. You are all familiar with this test. Just a few practical points should be stressed. First, always cover one eye with a red glass. It will help the patient to distinguish the two images and will simplify the work of the operator and the interpretation of the diplopia field after it is charted for study. Second, study your patient's field as it were through a transparency. You may view the patient's field as the patient views it or as though it were your own field, or you may view it from in front of the patient with reference to the patient's right or left. The latter method is perhaps the easiest because all examinations are made with the operator facing the patient. The charting should be done in the same way, with the patient in an imaginery position back of the charted field.

Third, in vertical diplopia, it is important to bear in mind, that a vertical separation which increases as the eyes are elevated, and also increases as the eyes are lowered below the horizontal plane of the vision, indicates that one is dealing with a paralysis of a depressor as well as an elevator muscle or that there is overaction or spasm of the associated muscle in the fellow eye. This phenomenon when present is most confusing unless one clearly grasps its significance. Fourth, the crossed or uncrossed character of the diplopia in vertical palsies is of great interest but should not be given great prominence because of its variability.

SOME NEURO-OPHTHALMIC STUDIES OF WAR INJURIES*

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Ocular manifestations of injuries to the nervous system are so varied that rather than attempt to cover the entire field, I will briefly present a few of the most interesting phases.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 3, 1922.

For convenience, the following classification has been adopted:

(1) Manifest lesions of the cranium, involving the cerebrum.

(2) Cervical smpathetic nerve injuries.

(3) Injuries affecting the tissues of the globe and the cranial nerves, either directly or by contre-coup.

(4) So called functional disturbances.

Under the first heading may be included cases showing different varieties of hemianopsia such as homonymous, upper and lower quadrant, central, paracentral and isolated scotomas. Vision in these cases may be diminshed though usually it remains unimpaired, even should the hemianopsia extend to the fixation point.

The work of Holmes and Lister (1) and later of Riddock (2), Morax (3) and others, revised somewhat our knowledge of the cortical localization of the retina. Prior to 1914-15 macular representation was placed in the anterior portion of the visual area, while the periphery was situated in the posterior portion.

Holmes and Lister found the following: (a) "The upper half of each retina is represented in the dorsal, and the lower in the ventral part of each visual area. (b) The macula is represented in the posterior portion of the visual area, probably on the margin and lateral surfaces of the occipital lobes. The macula has not a bilaterial representation. (c) The periphery is represented in the anterior portion of the visual area, and the intermediate concentric zones, between the macula and periphery, from behind forward in the visual cortex. (d) Those parts of the retinæ adjoining their vertical axes, are probably represented in the dorsal and ventral parts of the visual areas, while the retina in relation to the horizontal axis is projected onto the walls and floor of the calcarine fissures. (e) Defects of vision in the fields of the two eyes are always congruous and superimposible, providing no abnormality of the peripheral visual apparatus exists."

Morax concurred in general with the above deductions, but was not convinced that the macula had not a bilateral representation, for as he pointed out, central vision was usually normal or better, even where the hemianopsia extended to the fixation point, and was diminished or lost only when there was a lesion of both occipital lobes. This fact was emphasized by Dr. Ingham and myself (4) in a series of thirteen cases reported last Spring.

There probably exists at the point of fixation a small zone, say of one degree in extent, where there is an overlapping of innervation from each occipital lobe. Otherwise the preservation of normal acuity of vision would not be compatible with destruction of one macular center, i. e., the center on either the right or left occipital lobe.

Defects of vision in the fields of the two eyes may be, but are not always exactly superimposible.

Morax, Moreau and Castelain (5) made a distinction between the vision of the periphery of the macula, and that of the fixation point. They found just the same alterations in the periphery of the macula as in the peripheral field properly speaking, namely quadrant, complete, or irregular hemianopsia. These alterations may occur either in conjunction or not with peripheral alterations, thus presupposing two cortical centers, one for the macula, and one for the periphery, so close that frequently both are affected.

Besides deductions from study of deficiencies in visual orientation, Moreau (6) says to determine the real deficiencies in hemianopsia, it is necessary to make physiological studies of why central vision is so often intact in lateral and bilateral hemianopsias. He therefore divides the visual field into three zones of "perception, distinction and precision" from without inward, but with no sharp line of linear demarcation. He makes complementary studies with special test objects. In the outer zone objects are roughly and indistinctly perceived, in the middle they are distinguished, while in the central zone they are seen with precision.

His conclusions are that it is not a question of how much of a field remains or is lost, but the actual intereference with its function.

Riddock says that light and movement are the first stimuli to be appreciated in a recovering visual field, and since light cannot be charted, repeated examinations of moving objects in a blind field are of value in the prognosis of returning vision; thus in cases where there is perception of movement, there will be some return of vision. Where there is no return of movement after several months, the fields affected will probably remain blind.

Recovery for the appreciation of movement begins at the periphery of the field, and extends inward. These facts were also observed by Dr. Ingham and myself.

Under my second classification, the so-called Bernard-Horner syndrome, due to injury of the cervical sympathetic, was quite commonly observed, although few references in the literature could be found.

Prior to the war the usual etiology of such cases as were reported, was ascribed to aneurysms, enlarged glands, mediastinal tumors and cervical ribs.

Enopthalmos, ptosis, narrowing of the palpebral fissure, and myosis were the most constant symptoms, while decreased ocular tension and altered near point, were less often present. Tourney (7) stated that on looking toward the affected side, the difference in the size of the pupils diminshed, while the opposite was true on looking toward the sound side; also in many cases the nictitating membrane on the affected side, was more prominent than that on the sound eye. The last two conditions were encountered several times in a series of eleven cases, as was also anhidrosis. There was just a suggestion of hemiatrophy facialis in one case, while heterochromia irides, which is supposed to be due to section of the cervical sympathetic, was not seen. The latter, according to Calhoun, is never present in adults, although Bistis has reported one case.

Vasomotor disturbances were prone to appear several months after injury, and therefore if the cases were observed early, may not have appeared at the time of examination.

Lower lesions, affecting the brachial plexus roots, through which sympathetic fibres run, were the most severe, causing the typical occulo-pupillary syndrome, while lesions higher up, involving the sympathetic nerves, with complete or partial interruption, produced less marked symptoms than the root lesions.

Contusions of the cord caused the least pronounced phenomena, and usually resulted in more complete recovery than root or nerve lesions.

The action of cocain on the pupils was interesting in relation to the severity of different lesions. In root and nerve injuries, the pupils either did not dilate, or only to a slight degree, whereas in the cord contusions they dilated readily but not fully.

Thirdly, injuries affecting the tissues of the eyeball or ocular nerves, were of common occurrence and included hole in the macula, lacerations of the retina and choroid, atrophy of the optic nerve either partial or complete, and temporary paresis or paralysis of the motor nerves supplying the intrinsic and extrinsic muscles.

Lesions of the ocular tissues were of interest not alone because of their varied types, such as irregular tears of the inner tunics of the globe, and discrepencies in contour and size of that particular lesion—hole in the macula—,but also from the standpoint of their etiology. The usual history of such cases revealed a shell explosion close by, throwing the patient several feet in the air, or simply a sudden blast without bodily injury, producing a momentary alteration in the extra-ocular pressure, thus causing a concussion of the eyeball against the nonresisting bony orbit. In either case the result was apt to be the same, namely a linear rupture of the choroid; usually in the macular region, or a punching out, as it were, of the thinest portion of the retina at the macula.

Fracture of the bones of the orbit with a consequent pinching of the nerve, resulting in optic atrophy, was frequently seen. Personally this condition was observed many times in wounds traversing the face, or entering in the mastoid region with exit in the malar region of the opposite side.

Disturbance of the cranial nerves of the eye, was less frequently encountered, but Uhtoff (8) reported two cases of lesions of the 5th nerve with resulting epithelial erosion of the cornea, anesthesia of the cornea, and absence of lacrimation. One of these showed a small F. B. in front of the gasserian ganglion. Kapoustine (9) saw one case in which a ball had traversed the brain, presenting paralysis of mastication, diminution of vision and concentric contraction of fields; and another with an injury of the left face was followed by paralysis of the internal and external muscles of the left eye, and amaurosis. Examination eliminated any lesion of the eyeball. X-ray was negative. There were slight meningeal symptoms, and the condition was supposed to be due to a blood clot at the level of the inner portion of the sphenoidal fissure and the optic foramen. The symptoms, with the exception of the paralysis of the internal muscles, disappeared within twenty days.

Under functional disorders the disturbing factors, as a rule, were emotional and psychical, while the outstanding manifestations included diminished vision, contraction of the visual fields, with interlacing of colors, and usually mydriasis. Often associated with these were spasm of accommodation, temporary blindness, failure to recognize colors perfectly, scintillating scotomata, squint and diplopia, erythropsia, and muscæ volitantes.

Rochon-Duvigneaud (10) reported the case of a soldier who, while on guard duty, suddenly lost his vision. Examination revealed the patient to have been of a highly nervous temperament, possessing marked convergence with contracted pupils, and a manifest myopia of —12 D, which brought his vision down to 5/7. Under atropin there was a hyperopia of +1 D. The myopia returned after the atropin had disappeared.

In Lemiere's (11) case, a soldier under severe bombardment became blind, pupils were dilated, and marked blepharospasm resulted. At first his fields were contracted, and he presented a temporary slight optic neuritis. After one and a half months all symptoms had disappeared.

In support of Lemiere, Bussy (12) reported two similar cases with amaurosis, mydriasis, and anemia of the retina, showing marked thinning of the vessels. He believed this condition was a vasomotor disturbance under control of the ocular sypmathetic, and not the general sympathetic.

Bergl (13) presented a case of bilateral Argyll Robertson pupils, following the explosion of a mine. No apparent injuries were present. Similar cases were reported by Finkelburg and Axenfeld. Lues was eliminated, and the sign disappeared within three weeks. They believe it was due to a lesion of the gray matter in the region of the aqueduct of Sylvius.

Other interesting cases of functional disturbances have been reported, one by Dupouy and Bosc, with convulsions of face and limbs, general anesthesia and mydriasis; and another by Guillam, with a general contracture of the body, including the superior recti muscles. In most of these a lumbar puncture was negative, but their condition improved under this procedure.

The exact cause of these disorders cannot definitely be determined, but there is little doubt that commotion from high explosive shells, without evidence of external injury, produces a profound cerebral disturbance manifested by the various conditions observed. These are purely functional, meaning that the organic basis is not known. It may be vascular or an affection of the nerve cells, but the condition is capable of retroceding, and rapidity of cures has often been seen in such grave conditions as deafness and blindness. On the other hand, there are cases which resist all therapeutic or suggestive measures.

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DISCUSSION

Dr. Warren S. Reese (Philadelphia, Pa.): It was my good fortune to see the very interesting cases which were the inspiration of this excellent paper. I think that Dr. Scarlett is to be commended especially for his work on sympathetic nerve injuries. His series of these cases is by far the largest and most comprehensive on record.

The field defects resulting from occipital injuries which we observed at Cape May were mainly of the hemiopic type, although there were a number of quadrant defects and a few cases of homonymous paracentral scomatomata. Of these the right homonymous defects were most troublesome, especially when reading was attempted. Some of these patients were advised to try to read upside down but this did not meet with much success. Had this been taken up systematically however, as was the lip reading, I believe that a great deal might have been accomplished.

The theory of bilateral macular representation, as advocated by Dr. Scarlett, seems much more plausible than the unilateral theory.

On carefully going into the history of the sympathetic nerve cases, some of these men remarked that immediately after the injury the pupil corresponding to the side affected was dilated, or that the eye on that side protruded or had a staring appearance. This would seem to indicate that the primary effect of these injuries had been of an irritating or stimulating nature. All these cases, when we saw them, presented the signs of sympathetic nerve inhibition, as enumerated by Dr. Scarlett.

I am sorry that Dr. Scarlett had not more time to speak of the cases which came under his third classification and which comprised the concussion injuries. By these I refer to the ocular lesions produced by force transmitted through bone or soft tissues from an adjacent traumatized structure. I did not observe any ocular injuries, as referred to by Dr. Scarlett, in which there had been no external injury. These cases were most interesting and varied from a slight pigment stippling of the retina to avulsion of the optic nerve and extensive retinochoroidal disturbances. Hole in the macula was encountered infrequently. This, I believe, was due to the fact that these injuries were generally produced by comparatively small, high velocity missiles, whereas hole in the macula usually results from injury by a large and relatively slow-moving object, such as a baseball. Very often the course of the projectile could be traced quite accurately from the ocular lesion alone.

For obvious reasons, we did not see many cases of functional disturbance. I had one case of hysterical blindness following a moving picture camera explosion. He cleared up rapidly, however, under suitable psychotherapeutic measures.

Dr. Luther C. Peter (Philadelphia, Pa.): We are indebted to Dr. Scarlett for presenting this subject because he brings before us some very interesting thoughts for discussion. The first with which the speaker was impressed was his reference to macular cerebral representation. The last word on this interesting subject has not yet been said. Mills, in his book published quite a few years ago, speaks of the macular representation as a half representation and yet he feels that each center in the occipital cortex is more or less representative of the total macular area. He points out, however, that the dividing line is not so sharp in the macular area as is the peripheral representation. In this he is confirmed by Morax. Morax found two zones. In some instances an area of a degree to a degree and a half beyond the point of fixation was observed. In other instances he found an area ranging from 5 to 10 degrees beyond the point of fixation which remained intact. He therefore concluded that there is a foveal representation in each occipital cortex and also a larger area which includes the entire half macula.

The second point in Dr. Scarlett's paper which is of great interest is that of asymetry of the fields in homonymous hemianopsia. In the cases reported by Cushing two years ago, before the Neurologic Section of the American Medical Association, which met in Atlantic City, a certain number of fields showed a greater involvement of the field homolateral to the side of injury than in the contralateral field. This inequality of the fields has been observed by others and many attempts have been made to explain it. There are three possible methods of explanation. The first is that of inaccuracies in the technique of field taking. In recent years, however, this work has been done with a great deal of care, mostly by men of experience, and technical errors are readily detected. The second explanation offered is the anatomic explanation. It is thought by some that the associated fibres, the crossed and uncrossed fibres,, as they emerge from the chiasm, do not lie in immediate proximity. A lesion, therefore, when minute, might involve one without involving the other. This would not explain however the interesting fact that the field homolateral to the lesion usually shows greater contraction than the field contralateral to the lesion. The third, and correct explanation of this incongruity lies in the varying sensitivity of corresponding points in the retina. For example, a point 20 degrees to the temporal side of the retina is less sensitive to a stimulus than a point 20 degrees to the nasal side. The same is true of the superior and inferior parts of the retina. As the field homolateral to the lesion always represents the temporal retina and the contralateral field represents the nasal retina, this asymetry finds a ready explanation.

DR. SCARLETT (in closing): A word concerning the method we employed in examining these cases. For the periphery we used the perimeter and for the macula we used a screen. In all cases we found that hemianopsia extended within one or one-half degree of the fixation point or even up to the fixation point.

In several cases, to study the hemianopsia in relation to the fixation points, tests were made at a distance of five meters with a white object 5 mm. in diameter. At this distance the object was seen only when it approached within less than 1 degree of the fixation point.

THE MORBIDITY THAT FOLLOWS PROSTATECTOMY*

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It is remarkably pleasant to talk of the success of prostatic surgery, returning benefits of a most gratifying nature, in patients least likely to endure an operative procedure. The percentage of successes to-day is fortunately high, and we have lived to see a mortality rate that was shocking, reduced to a nation-wide average of about ten per cent: ninety successes and ten failures. Unfortunately, we must add to the ten per cent of failures (actual mortality) another equal percentage where recovery took place perhaps, but only a partial return of normal function followed. To be fair we must all recognize that such are also surgical failures, and I believe they will be eliminated only by a close analysis of these failures, and not by a greater perseverance in the methods that have been so far productive of this success. They are apt to be errors of an operative technical character that have left us a living patient, to be sure, but one with a urinary frequency, or a persistent residual urine, a persistent fistula, or even a return to catheter life. It is this group, presenting a morbidity that the specialist is called upon to relieve, where the operative procedure has not been productive of the hoped-for result.

There are three technical mistakes that to-day stand out as the most serious errors of judgment in handling such cases of urinary obstruction, and I wish to present and discuss them briefly, hoping by photographs of actual obstructive prostates to show you wherein the technical error lay.

First of all, let me consider from a different angle than the usual, the long mooted question of the choice between suprapubic and perineal prostatectomy. There is no doubt that the hypertrophied prostate can be successfully removed by either of these methods; also that in the hands of those especially adept in one or the other method, the percentage of successes is high. Everyone has come to the same conclusion, that it is the preoperative and postoperative care of the patient that counts for more, in the ultimate result, than the mere operative procedure.

My studies have convinced me that the prostate in hypertrophying shows a predilection for one of two fixed ways of enlarging, and in this difference, the internal sphincter plays a very important rôle. Hedged about by fixed anatomical structures, an enlarging gland must ultimately grow upward. In doing so, the most frequent path of growth is by a gradual dilatation of the internal sphincter and a gradual herniation of the hypertrophying prostate through it into the bladder cavity. The second mode of enlarging is likewise upward, but in this type of case, the internal sphincter remains tonically closed and the prostate in hypertrophying, raises it and the entire bladder mass without dilating the sphincter at all, it never becoming anything more than a hypertrophied gland remaining within its anatomical limits.

(At this point lantern slides were shown to demonstrate this difference.)

It can be quickly seen that this difference as to whether or not the internal sphincter is dilated, creates a preference as to whether the prostate be removed by the suprapubic or the perineal operation. There have been numerous studies made to demonstrate whether or not, following prostatectomy, the internal sphincter becomes again a functioning muscle. Diversity of results from these studies proves the point just made, that there are these two differences of sphincteric reaction to hypertrophy.

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It is a well-known fact that irritation of the posterior urethra creates a desire for micturition. This is seen well exemplified in acute posterior urethral infections, as often also in the passage of instruments. If, following prostatectomy, the internal sphincter does not again close off the posterior urethra, it is not to be wondered at that the patient has abnormal frequency of urination, durnal or nocturnal, following prostatectomy.

Following these two types to their proper surgical handling, it is easily seen that in the first the whole growth has *gradually* dilated the internal sphincter. The surgical indication here is to remove that growth by suprapubic prostatectomy, and in doing so, the dilated sphincter will neither be in the way, nor will it be injured by such enucleation, and following such an operation, it may be expected that the internal sphincter would regain its tonicity and return to function.

In the second type, however, it would be impossible to enucleate such a prostate without first dilating the internal sphincter. It is very dubious whether such could be done satisfactorily at the moment of operating, and in doing the enucleation the result must be that such a sphincter is inevitably lacerated. Again it is very questionable whether such a lacerated muscle would ever regain its functional capacity, and this is the type of hypertrophy which should be removed by the perineal operation, in which the sphincter would neither be dilated nor injured and its functioning ability in nowise hampered. Likewise, this is the type where, following perineal prostatectomy, one can feel, after the enucleation of the prostate, a tight ring about one's finger in the vesical orifice, and it is also the type occasionally seen where one enjoys the delightful experience of having a perfectly continent patient immediately following removal of the perineal drainage tube.

I have had three such patients in whom the perineal incision practically healed per primum, and several others in whom urinary continence was present from the time of the removal of the drainage tube, 24 hours after operation.

Close cystoscopic study is necessary for a pre-operative decision as regards this point of the tonicity of the internal sphincter, and on it should be based the choice of operative approach.

The second point I wish to make relative to the technical performance of prostatectomy concerns the presence or absence of median lobe enlargement. It has been sufficiently proved, by various investigators in the past, that there is no longer any question as regards the pathological development of a middle lobe of the prostate. When such is present, dilation of the sphincter is always the case, and suprapubic prostatectomy is the operation of choice. The one particular point that I wish to make is the possibility and it is a frequent one, of the middle lobe being the sole obstructing feature, and in the total absence of lateral lobe enlargement. In such a case, the usual stigmata of prostatic hypertrophy obtained by rectal examination are absent and cystoscopy alone will render an accurate diagnosis.

(At this point, lantern slides were shown of cases of solitary median lobes of obstructive character.)

One must constantly keep in mind the possibility of such solitary median lobes, wherein the clinical history and the catheter examination suggests prostatic obstruction, but where rectal examination reveals a prostate in no wise above normal in size, and I repeat such median lobe enlargements cannot be felt per rectum.

The third technical error that I wish to discuss with you is the proper handling of that condition spoken of as "contracture of the vesical neck," "sclerosis of the internal sphincter," or as "median bar formation." Parenthetically, let it be said that this pathological condition gives a clinical picture identical with that of hypertrophy. The examination likewise reveals a varying amount of residual urine, while generally a small, even atrophic, prostate is felt on rectal examination.

We have all heard the surgeon remark at operation that he unfortunately was dealing with a small sclerotic prostate. To-day I would deem such a gross error of surgical diagnosis, and an even worse error of surgical operative technic. Such prostates can not be enucleated; the process is one due to inflammation and not hypertrophy.

(Lantern slides were here shown to demonstrate this type of bladder obstruction.)

Its proper surgical handling requires the removal of the obstruction due to the sclerosed posterior vesical lip. The choice of method by which such should be done varies with the judgment of the surgeon. Such tissue may be destroyed by fulguration, by the urethroscopic punch operation (aided or not with the cautery), or else by suprapubic cystotomy and the excision of a wedge of tissue from the posterior lip of the vesical orifice. Personally I feel that the patient's time and resistance should be considered, and he be given the advantage of a trial of the former procedures before reverting to a suprapubic operation.

These are, therefore, three salient points of an operative technical character that I feel are frequent errors of judgment, and are no doubt likewise frequent reasons of an incomplete recovery following prostatectomy, causing this operation to have a morbidity that should not exist.

DISCUSSION

Dr. B. A. Thomas (Philadelphia, Pa.): When I was invited to discuss Dr. Stewart's paper on the "Technic of Prostatectomy,' I did not know that on such short notice I should be asked to discuss the pathology and the morbidity of hypertrophied prostate. Certainly, the demonstration of the pathology of prostatic hypertrophy, as shown by Dr. Randall, is very commendable. I think, however, that the pathology of this gland is pretty well understood and I am very much interested to see Dr. Randall emphasize the matter which Dr. Geraghty brought out in respect to dilatation of the internal sphincter in this condition in formulating his new modification of perineal prostatectomy. I feel it is a matter to which we should give material consideration, and doubtless plays an important part in respect to the morbidity in this condition.

In this connection, I feel that the modifications which have been proposed for perineal prostatectomy in recent years are to some extent an admission of the shortcomings of the operation in a large minority, if not a majority of cases of prostatic hypertrophy. I have various modifications in mind (as Dr. Young's new modification of his own well-known procedure) and Dr. Geraghty's admirable one emphasizes the importance of thoroughly avoiding the compressor urethrae muscle in exposing the junction of the prostatic and membranous urethra, thereby avoiding incision of the membranous urethra or cut off muscle. This, however, is a point about which I thought Dr. Young had admonished us. Certainly in my own work I have always safeguarded this muscle, for it is obviously of paramount importance in the prevention of incontinence of urine after these operations. Dr. Cecul's modification in prostatectomy is another instance of what seems to be a slight admission of the unsatisfactory results which are obtained by the perineal operation.

I agree strongly with Dr. Randall that the most important consideration, perhaps, in undertaking a prostatectomy is the determination of the fitness of or what we call the preoperative care of the patient for the operation. I cannot go into this phase of the subject in great detail, but we all know that the determination by various examinations, particularly the cystoscope, of the exact character of the pathology is a very important consideration, and unless that is done by one who is capable of interpreting cystoscopically the living pathology of the prostate, and who is experienced enough to know the operative indications, the best results and minimum morbidity will not be realized. He is the man who should be best qualified to carry out the details of the operation, especially in difficult cases. I feel that after having determined by all the technical examinations necessary, as to whether the perineal, suprapubic, transurethral, punch operations, or what not, should be performed, the surgeon should stand impartially prepared to do that particular operation which should be done in the given case, dependent upon the character of the pathology present, and not subject the patient to that particular operation to which he is wedded for one reason or another.

The two-stage procedure, or what has been called the "safe" procedure, I think can be rendered just as safe in 90 per cent of cases by proper catheter drainage of the bladder in the hands of an experienced urologist, as by primary cystostomy. It is very important, as pointed out by Dr. Randall, in the suprapubic operation, to adopt the procedure popularized by Squier. With respect to the punch operation, which was mentioned in these cases and should be employed in a minority, certain precautions must be observed. The indications for and the benefit to be derived from this operation in many cases are clear cut and should not be underrated, and will not be if these patients are properly examined and studied before operation. I believe the operation may be just as dangerous a procedure as a formal prostatectomy, for there have been a number of deaths from hemorrhage following the punch operation. The proper procedure to adopt if you wish to render the punch operation no more dangerous than a prostatectomy is to associate it with a cystostomy, either suprapubic or perineal. I feel that you can carry out a better punch operation by seeing and feeling what you are doing, with a complete control of hemorrhage if bleeding is pronounced, and perhaps as the result of better drainage of the bladder, minimize the danger from infection.

Dr. Thomas C. Stellwagon (Philadelphia, Pa.): Dr. Randall deserves every credit for his work in collecting so impressive an array of specimens, as they are both interesting and instructive. I feel very much as Drs. Randall and Thomas do with regard to the question of preoperative study in prostatic cases. I think that a great many of the errors and a considerable percentage of the mortality following prostatectomy is due to the fact that the patient has not been seriously enough considered, while the surgeon has been more or less set in his views as to a certain definite procedure. I am an advocate of the suprapubic in preference to the perineal route in prostatectomy, as, I believe, are most of the surgical profession in this country to-day. Notwithstanding the fact that credit must be given where credit is deserved and that perineal prostatectomy in the hands of such masters as Dr. Hugh Young is a most excellent operation.

Most of the criticism called forth against the suprapubic route was largely engendered because of Freyer's operation, which, briefly speaking, was to begin enucleation at that point at which the prostate presented. The consequence of such practice is only too evident. Traumatization and permanent damage to the internal sphincter and the musculature surrounding the neck of the bladder is often inevitable. But this fault has been largely eliminated where the technique followed by Drs. Loux and Squiers is adhered to. They recommend beginning enucleation as far forward as is possible, working backward, and peeling off the fibers of the internal vesical sphincter. I think that much of the mortality is due to injury. One thing impressed upon me by the Mayo Clinic is that the average surgeon tries to take away too much prostate, and does not realize that what he recognizes as hypertrophy is in reality only inflammatory thickening. This he attempts to enucleate. The procedure is impossible. That trauma which it delivered to the vesical neck is removed when enucleation is confined to the gland itself.

As to the determination of which route shall be followed, I think that the surgeon should have an open mind upon that question. In Jefferson Hospital about 95% of our prostatectomies are suprapubic; and I do not think our mortality rate has varied widely from that seen in other institutions. I have had as many cases of incontinence follow one method as the other. It is a "fifty-fifty" choice. Considering the preoperative care of prostatic cases, I do not mean to cast aspersions on the general surgeon. However, I believe that he sometimes errs in that he does not lay sufficient stress upon thorough previous study.

The practice in most hospitals has been study of the prostatic case by the urologist and subsequent enucleation by the general surgeon. The 10% mortality rate of which Dr. Randall speaks will be reduced when we realize that the man who is continually at work with the cystoscope is better able to judge the type of prostate with which he is dealing than the erstwhile cystoscopist, and, provided he has been surgically trained, will perform a better operation as a skilled urologic surgeon. To be a competent cystoscopist requires continuous use of the instrument and an accustomed eye properly to interpret the pictures seen in the bladder neck. The cystoscopic view is at times a misleading one, and the perfect instrument has not as yet been produced. Only last week I had this fact very forcibly brought home to me. The punch operation was tried in what seemed to be a case of mild middle lobe involvement, and without success. Suprapubic cystostomy revealed a large median lobe—a very different picture from that cystoscopically seen and I did an enucleation.

Dr. Thomas is correct with regard to the punch operation, in my opinion; and I have had one or two very serious results that arose as complications following its use. In the hands of the average surgeon the so-called closed punch operation is not a safe surgical procedure. It should, I think, be done openly, which provides for clear vision and the subsequent control of hemorrhage if necessary at the time of operation. I am not in favor of the fulguration of median bars.

Dr. Leon Herman (Philadelphia, Pa.): I agree with Dr. Randall that, in the hands of the expert, both the perineal and suprapubic operations are attended with very excellent results. I cannot, however, endorse the statement that the primary mortality is a negligible factor in prostatic surgery. Dr. Randall's estimate of the average mortality rate is, I think, too low. We have found it to be, in a large series of collected cases, between twenty-five and thirty per cent. These cases were collected from sources that would be grouped under the term "average"; the latter was adopted to include the work of men who reported less than one hundred cases. Among those who had operated upon one hundred or more patients, the primary mortality rate was less than twenty per cent. Freyer of London, who performed more than 1,550 operations, had a mortality rate of 3½ per cent. The two-stage operation is one of the important factors in lowering mortality and decreasing operative morbidity, especially hemorrhage.

Patients are now being operated successfully who would have been hopeless risks ten years ago with the one stage technic. The most brilliant results are attained in aged patients with acute urinary retention by opening the bladder above under local anesthesia and subsequently removing the prostate under gas-oxygen anesthesia.

I must take issue with Dr. Randall as regards the part that injury to the internal vesical sphincter plays in postoperative incontinence. Under normal circumstances, the internal sphincter is the important factor in retaining the urine in the bladder. There is no vesical neck even when the bladder is greatly distended, as anyone can easily prove by observing the rounded outline of a normal cystogram. In the vast majority of cases of prostatic enlargement the prostate pushes aside this muscle and renders it impotent to hold the urine, which function is assumed and carried on successfully by the external sphincter. Under these circumstances prostatectomy adds nothing to the impotence of the internal sphincter which has long since been put out of commission by the enlarged prostate. In cases in which the prostate does not push aside the muscle to enter the bladder, but causes urinary obstruction by obliteration of the prostatic urethra, the internal sphincter remains intact, but any injury that may be done during prostatectomy is no greater than occurs in the ordinary case as the result of pressure of the intravesical portion of the enlarged prostate. For this reason I do not believe that this is of any importance in explaining postoperative morbidity. We have dilated the sphincter in cases of this kind and removed the prostate through the dilated orifice. The gland can be removed in cases of this kind with great ease through the perineum, but this will contribute nothing in the way of preventing morbidity.

Operative morbidity, aside from the acute complications such as hemorrhage, occurs, in our experience, in that group of cases in which obstructive symptoms are prominent in the absence of actual hypertrophy of the prostate. The pathology in these cases is inflammatory in the vast majority of instances. In the absence of definite obstruction or severe cystitis, the best procedure is dilatation. It is my impression that intra-urethral operations in cases of this kind are followed by evil results in so many instances that the greatest good would come to the greatest number by open operation. In proof of this I would recall to your attention the multiplicity of methods that have been devised for the treatment of this particular group of cases.

The study of large groups of cases collected from various sources indicates that the perineal operation is attended by far greater postoperative morbidity than is the suprapubic operation. This is explained first, by the greater difficulty of performing the perineal operation; second, by the failure to remove the obstruction completely; third, by injury to the sphincter mechanism; and fourth, by injury to the rectum. The suprapubic operation is a far safer procedure in the hands of the average man, and the results obtained far surpass those attending the infrapubic procedure.

Dr. Moses Behrend (Philadelphia, Pa.): It seems to me that the general surgeon ought to defend himself on account of the things said here this morning. If the specialty of urology has been so specialized, as stated, why do they not reduce the mortality? It seems that before urology was specialized the mortality was less. Now we have so many urologists in the field, and yet the statement was made that the mortality is from 10 to 20%, which is entirely too great. Even if the general surgeon has not been taught the use of the cystoscope, all cases of enlarged prostate, before they are operated on, are cystoscoped by the urologist, and every case is given preliminary treatment such as has been outlined.

I have followed with great interest this question of prostatectomy because in 1902 I had my first perineal prostatectomy and did several after that, then changing to the suprapubic operation.

I agree with Dr. Herman that the indwelling catheter is an abomination and responsible for much infection and many deaths. Suprapubic cystostomy is the proper course to pursue in cases of retention of urine. There are very few men who can stand the indwelling catheter for any length of time.

It seems to me that if a man has a profound knowledge of the anatomy of the perineum, he can do the perineal operation and he need not adhere entirely to the suprapubic route.

Dr. Alfred C. Wood (Philadelphia, Pa.): The chairman might remark that although perhaps he is classed as a general surgeon, he also has had some experience in prostatectomy, going back for 25 years, and like some other members present, has seen a great many changes of viewpoint. Opinions stated as facts have been very aggressively put forward, only to be forgotten as the years pass. Of course, the last word has not been spoken and will not be until the millenium. My own experience leads me definitely to the conclusion that in the vast majority of cases, in my hands, the suprapubic operation gives the best functional results and, of course, like any other operation, should be properly done.

All agree that there should be a selection of cases. It is freely admitted that certain cases should be operated upon through the perineal route.

There has not been a single case of incontinence of urine in my suprapubic cases, except in malignant disease. In many perineal cases I remember very well the difficulty in control that followed, so that one very prominent genito-urinary specialist of New York City had "classes" in his hospital for his post-perineal prostatectomies to teach them vesical control over again, and it was quite an experience to go and see the classes practicing every day under his commands. This has never seemed necessary in the suprapubic cases.

Dr. Randall (in closing): There are a great many things to answer in this discussion, but I am most anxious to make the points of my paper clear.

Dr. Behrend's defense is poorly taken. I understand him to ask that if the mortality and morbidity of prostatectomy is high why the specialist does not endeavor to reduce it, inferring that the progress in this line of surgical work has come from the general surgeon. Dr. Herman has already answered this question when quoting the statistics accumulated by Dr. G. S. Whiteside, who showed in 1915 that out of 1423 prostatectomies the mortality in the hands of urologists (who performed 820 of the operations) was less than 3%, while the remainder, operated upon by other surgeons of less experience in prostatectomy (although perhaps equally or more skillful in other forms of surgery) was 26%. Whiteside five years later repeated his statistical study and again proved this wide discrepancy. It is this complacent viewpoint, characteristically expressed by Dr. Behrend's remarks, of satisfaction with things as they are, that I wished especially to point out to you with the accent not on the mortality, so often recounted, but upon the failure to obtain even a successful operative result, where such was promised. My plea to-day is not one of criticism, but an effort to try to help you understand what these studies have taught me, and if I may be excused for so saying, to help teach you.

To answer Dr. Herman's remarks, I wish simply to state that you must draw a very distinct line between hypertrophy and other obstructive lesions. The punch instrument and operation was not designed for the relief of hypertrophy of the prostate. Its utility is distinctly limited to obstructive bar cases. These are caused by a sclerosis, probably following a chronic inflammation, and for this reason cannot be enucleated as hypertrophy can. I know of but one fatality following this operation and that in the hands of an inexperienced interne who damaged other structures than the vesical lip. It has a definite utility in selected cases, which again accentuates the point of my paper—thorough study of each individual case.

As regards the operation of prostatectomy: I believe 90% of all hypertrophied prostates can be successfully enucleated by either the suprapubic or perineal route, but in the other 10% the proper choice of approach will determine the question of whether or not a postoperative morbidity will ensue. I am lenient; in Dr. Deaver's recent statistics compiled by Dr. Herman, the morbidity figure is 24% for the suprapubic and 30% for the perineal route.

Dr. Herman thinks little of the importance of the internal sphincter following prostatectomy. I am convinced of its great importance for perfect postoperative function and plead for its careful handling and preservation. The continent patient one often sees after successful perineal prostatectomy speaks the whole truth concerning its physiological function and when such is present augurs a most perfect postoperative result. This is again the point of my paper that I wish to leave with you.

VOICE PRODUCTION*

WITH A FEW SUGGESTIONS FOR TREATING HOARSENESS AND LOSS OF VOICE IN SINGERS.

ROBERT F. RIDPATH, M.D.
PHILADELPHIA, PA.

Many papers and books have been written on the subject of voice, but very few have gone into the subject from the standpoint of the loss of voice from other sources than those of a pathological nature. It was with this in view that I finally decided to present for your consideration to-day, a paper dealing with this phase of the subject.

I originally intended to review the anatomy of the larynx, but decided that we had probably better shorten the paper by leaving it out.

Sufficient to say, vocal sound is produced by the vibration of the vocal cords. Voice is sound rounded and refined by the numerous resonators into the various tones. The mechanism of singing differs from speaking. In ordinary speaking, the range is about one-half an octave, whereas in singing it may go to two and one-half octaves.

Vibrations number from sixteen to thirty-two thousand per second. The thinness or thickness of the cords do not of themselves indicate whether the voice is soprano, tenor, contralto or bass, as many other elements enter into this particular scale. In ordinary speaking, the vocal cords are slightly apart and not in close apposition, whereas in the singing voice, they are in close apposition and in the higher tones even overlap.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Scranton Session, October 5, 1922.

According to physiology, there are three positions of the vocal cords:

1st, Respiratory—that of inhalation. (The cords are widely separated.)

2d, Phonation—that of speech. (The cords almost approximate.)

3d, Cadaveric—that of death. (The cords are midway between phonation and respiration.)

To this, it seems to me, should be added a 4th position—that of singing.

The vocal membrane is attached to the aretynoid process posteriorly and the thyroid cartilage anteriorly, and it is due to the three motions of the aretynoids, that of forward, downward and inward, which permits the cords to be brought into a position of phonation. If the extrinsic muscles are then brought into play we have a tilting backward of the cricord cartilage to which the aretynoids are attached. This motion acts in the same manner as a key on a violin and tightens or stretches the cords. The tighter the cord the higher is the pitch. The quality depends on the control of the amount of air used and resonation.

The resonators consist of:

1, The sinus of Morgagni. It lies above the two true vocal cords (one on each side). The cavity is triangular with the apex above. Air pressure from below bulges the membrane of the cavity outward.

2, Epiglottis. Although numerous authorities have questioned the bending or folding of this cartilage, nevertheless in the vocally trained larynx, there is a bending in of the sides; thereby, with the aryepiglottic folds forming more of a tube than would otherwise be possible. Sound in this way is forced to hit the upper part of the crest, reflecting from there to the

3, Pharyngeal wall. This acts in a similar manner as the resonator of a band stand.

4, The buccal cavity.

5, Accessory sinuses of the nose.

6, Shape of the nose.

7, Teeth.

All of the resonators give roundness; tone flows out as waves instead of as sharp sounds.

The tongue does not belong to the group of resonators but acts as a former of words.

Voice characteristics differ widely. Some males have a high pitched voice, others a low pitched voice, illustrated by the tenor and basso; the same being characteristic of the female where we have the soprano or the contralto. Now what constitutes the difference? The difference is due to

1st, The position of the cords.

2d, The shape of the voice box or glottis. (This includes the epiglottis, larynx and the upper part of the trachea.)

The voice box is a tube, practically the same kind of a tube as a pipe organ, and it is within our power, by using the aryepiglottic folds of the membrane, to lengthen or shorten this tube in the same manner as a flute player shortens his flute by allowing the air to escape at the distal or proximal end, thus producing a higher or lower pitch. Just so is a vocal sound produced. The air is forced through the larynx from below upward. The pressure comes from below and as the compressed air meets the vocal cords, which are, according to the sound produced, approximating or nearly so, results in the tone made.

In ordinary respiration we breath through the nose. In speaking and singing we are unable to get sufficient air through this means and we use the mouth as an accessory.

In phonation, the anterior one-third and the posterior one-third of the cords approximate, with the chink or separation in the middle third. In singing, as stated before, the cords approximate or may overlap.

One of the most frequent causes of loss of voice or the lowering of the pitch and tone of a singer's voice is due to incorrect breathing. It is remarkable the number of vocal teachers who utterly, either through ignorance or the wish to produce a singer quickly, fail to teach their pupil the necessity of proper breathing.

To quote Behuke—"Breathing goes on regularly while the voice is silent, but in speaking and singing both inspiration and expiration have to be regulated according to the nature of the phrases to be spoken or sung. If the speaker does not know how to take breath and how to control the expiration, his delivery will of necessity, be jerky and uncertain."

In the singer it is even more important that he should be able to fill his lungs well and have absolute command over his expiration, for while the speaker can arrange his sentences, the singer is bound by the music before him.

One of the best vocal teachers we have today lays so much importance to correct breathing that he drills his pupils for two or three months in this alone before he permits them to utter a single sound.

Sir Morrell Mackenzie says—"As regards the blast, the great object to be aimed at is that no air shall be wasted or expended unproductively. Just the same amount required for the particular effect in view must be used. Too strong a current tends to raise the pitch, a result which can only be prevented by extra tension of the vocal cords, which of course entails unnecessary strain. Or the air may be sent up with such velocity that some of it 'leaks' through before the glottis has time to intercept it, with such violence as to force the lips of the chink a little too far apart."

It is decidely wrong to train the voice at its maximum intensity. Rather aim at purity and sweetness than volume. This will come of its own volition if it is there. The breathing should be so much under control, and so entirely transformed into sound that the flame of a candle at a distance of twelve inches from the performer's mouth should not flicker as he sings. This is one of the best tests of whether the voice is being properly used.

A singer with a trained voice sings through the nose to get the head sound. The untrained singer sings through the mouth and we have the throaty sound. All the tones of a singer should be felt through the nose. The singers voice not only must be under absolute control but must coincide with his actions. Everybody can sing, but not all can be opera singers. The voice cannot be produced but it can be improved. Great singers must be trained. It takes six years to produce an operatic singer, provided he has the voice.

There are several methods of cultivation of the voice. The majority of vocal teachers use the Italian method, in which the scholar is told to fill the chest with air, immobilize the chest, stand upright and use the diaphragm. The power of force is just the quantity of air thrown through the glottis that is needed and it is accomplished through control with the diaphragm. The contraction of the recti muscles force out the quantity of air desired and when all the air is exhausted, the chest is filled up and in a fraction of a second the air needed is inspired. The exact amount of air needed is allowed to go out and none is wasted as with us. The control is by the diaphragm and the intercostal muscles are fixed except when all the air is exhausted.

Falsetto Voice: This is a false voice and is produced when the cords are not together. It is the highest voice we have in the male. The cords are further apart than in the speaking voice. It is due to their ability to make the anterior third of the cords vibrate without the posterior. It is only possible in some and usually in the fat, tall, robust man.

Practical Points: Singers and speakers, especially those who use their voices nightly, may become hoarse or lose their voices entirely. Their living and profession is jeopardized, they must use the voice or their contract is forfeited. What is to be done? Examination of the throat and larynx may not reveal anything abnormal or pathological. The cords may show a slight redness or not. Many singers have thick red cords normally.

1. The first thing to do is to procure a complete history of the length of time the patient has been singing or speaking.
2. Their training (how long they took vocal lessons.)
3. What is the character of the voice?
4. Did the aphonia come on quickly or gradually?
5. With a cold or not?

Naturally if we have a pathological condition as the cause, proper remedial agents and treatment should be instituted.

Let us take up the causes in the order given.

1st, Length of time the patient has been singing. All vocal teachers recommend a rest to the voice at least one day every week. Many of these patients not only sing during their regular appearance but after the performance. They sing for those entertaining them, thus bringing extra work to the cords, for it must be remembered that a singer or speaker must of necessity run over his part sometime during the day, and unfortunately too many times this is after a heavy meal when the diaphragm cannot be used at its best, thus compelling the artist to bring more pressure on the cords to produce the tone desired, with a consequent strain.

2d and 3d, Their training. This and the third (What is the character of the voice?) had better be considered together. Do they breathe properly? In the first part of the paper I have tried to point out the necessity of the proper method to be used. Are they overstimulating the cords by extra efforts to produce tones or sounds of a higher pitch than is normal for their particular throat. Have they been trained wrongly, their teacher producing or trying to produce a soprano when the scholar has a contralto voice or vice-versa? Likewise in the male is a baritone straining his cords, larynx and resonators to sing base or tenor? Is the patient physically below normal? Many other conditions must be taken into consideration besides the voice.

4th, The quickness of the onset. Vocalists who sing too high tones will gradually lose the voice. This usually takes place after they have vocalized nine months to one year. Should the voice be lowered suddenly, there will usually be found a slight hemorrhage on the cord with some swelling of the surrounding tissue.

5th, With a cold or not? Naturally if the patient has a cold with loss of voice we know the cause—and the treatment should be directed from that standpoint. If without a cold I have tried to enumerate some of the causes.

Singers may have enlarged and diseased tonsils and the advisability of removal must be determined. Removal changes the voice, as giving a lower pitch, or may even ruin it, as singers with tonsils have been trained with the tonsils as part of their singing mechanism. If sufficiently diseased, advise removal but warn them that the voice will change to a lower or higher pitch and after the operation they must have the voice retrained and replaced since the operation has changed the shape of the cavity. Be careful to remove only the tonsils and avoid the surrounding structures, since damage to the pillars may ruin the singing voice entirely.

A patient may come with a chink in the center of the cord. This is not a paralysis. Again he has exercised the voice in the wrong way. Maybe in the case of a bass or a baritone singer he should sing a higher part. The voice does not tighten the cords as it should and they lose some of their tension.

In all singers who have become hoarse or who have lost the voice, rest should be a feature of the treatment. Complete rest will not be necessary very often, but a change will be decidedly more beneficial, such as humming through a comb covered with tissue paper, this changing the character of the tone and exercising the cords and resonators.

Singers Nodules: This is a bulging in the region of the anterior portion of the cords. It is traumatic. If it is not too far advanced it can be cured by changing the voice; not by rest but by exercise. Have the patient hum by singing "Ney, Hey, etc." by bringing the tongue inside the teeth with the lips closed and recommend the patient to do this for 10 minutes four times daily. Give the patient 3 drops of dilute nitric acid on a lump of sugar ½ hour before going on the stage. Inhalation, lozenges and tablets are of little use in these cases.

DISCUSSION

DR. MATTHEW S. ERSNER (Philadelphia, Pa.): Dr. Ridpath is to be congratulated on the splendid manner in which he has presented his paper and especially the type of subject he has chosen. Many of us are living in large cities and cosmopolitan centers where there are hundreds and probably thousands of students who are striving to become opera singers and suddenly awaken to the fact that they are not progressing, that there is something lacking in their singing. They naturally come for aid to their physician and among them the laryngologist stands foremost. He cannot advise the singer unless he hears him sing. If the singing method is wrong he should suggest change of teachers. If he sees that there is no voice at all he should frankly tell the student to cease with his studies. Many young people who are ambitious or what we might call "stage struck" and who do not have a voice that is capable of developing into a great one, are induced by teachers who are not really conscientious teachers but who are charlatans, to believe that they have the makings of a great voice. The student, after months of study begins to realize and looks for trouble in the throat, and it is at this time that he goes to consult with the laryngologists. It is therefore up to the laryngologist to help suppress the charlatans of this profession.

There are two methods of teaching singing at present. One is the Italian method, which is the natural method of singing. The Italians had a very different idea from that described by Dr. Ridpath. He, I think, has confused it with the Garcia method, introduced about 1854. The Italians never paid any attention to breathing. I do not see how anyone can sing if he or she is trying to control the diaphragm and at the same time carry out the message of the composer, plus the individual and the personal sentiment in interpretation. The Italians paid little attention to the physical side of singing but developed the mind of the singer to control the breath just as naturally as one does while speaking.

Garcia discovered the laryngeal mirror and developed the physical teaching in connection with the voice. As long as the voice is at a certain pitch, no matter what tone, the larynx remains motionless. The open voice is simply the natural tone, a tone which is sung by instinct. To illustrate, the teacher will say "Open the mouth to sing." The nasal voice may be of two varieties, the obstructive or the muffled voice, or the voice where there is a great volume of air escaping through the nasopharynx into the nose. Should there be any mechanical interference in the form of obstruction, that should, by all means, be corrected, if the voice by scientific means has not already been placed. The guttural voice is due to tightening of the muscles. For some reason or other the German singer has a tendency to sing so.

The voice has a much higher and greater mission to accomplish than mere concentration on the physical phases. It is the voice that interprets the soul of the composer and brings out all the emotional features. It is a generally received idea that a singer's life is a merry one. One should study for individual pleasure and accomplishment and not think of the voice as the basis for an operatic career. It is my belief that singers are born and not made. By that I mean that a born singer does not require study. On the contrary it is the born singer who requires conscientious study, energy and time to perfect the voice. On the other hand, it is impossible to make a singer, no matter how much scientific study is put into the voice. All voices are not physically and physiologically adaptable for a career if the voice does not show natural singing instinct. No gold could repay the disappointment of a singer's life when once his dreams are shattered. The charlatan's theory of building air castles into the vocal student's mind will soon burst into bubbles.

DR. ROBERT A. KEILTY (Danville, Pa.): Being a pathologist, I hesitate to discuss voice production, but I can't help but take two minutes to bring out some practical experience. I have in my own family a sister who has just made her debut in opera in Italy. We have gone through the gauntlet of all sorts of experiences. She has been trained in New York. I should like to disagree entirely with the last speaker when he says that singing has nothing to do with respiration. Instead of respiration riding the voice, by practice the act becomes quite mechanical. As a matter of fact the well-trained singer is able to produce a bulging of the abdomen by means of the diaphragm equal to more than four inches. Most of her voice volume and her long sustained notes are the result of diaphragramatic action. It is just as mechanical in the singer in voice production as it is in us in ordinary breathing, but it only comes after years of practice. Of course, the singer has the quality to begin with, but diaphragamatic action develops the volume. Through these exercises and breathing the opera singer has the volume which enables her to fill a large opera house and marks her as different from the singer with voice quality who is only able to fill an ordinary room.

Another point mentioned was what can be done in the throat. This is a subject which gives every singer concern and which calls for rare judgment on the part of the nose and throat men. In my sister's case, we have had all the experiences from recommendations for complete tonsillectomy to daily nose and throat treatments. I am very grateful to two of my Philadelphia friends for their advice to let well enough alone. After a very annoying experience with treatments in New York which were advised two or three times a week, my sister has been able to appear on an average of three times a week for the past two years without any treatments whatsoever. In the absence of pathological lesions and with a pale throat and small tonsils, if that individual is a singer, the less the throat is disturbed the better the quality of the voice will be. Finally, after the vocal tones have been placed and adapted to the music box of the mouth, tonsillectomy is quite apt to upset entirely the voice character and should never be performed except where the tonsillar disease is very grave.

Dr. Ridpath (in closing): I know this is a new subject to bring before the Society but I believe it is one in which everybody should be interested. I think, of course, that Dr. Ersner is wrong, and Dr. Keilty and I are right about the breathing being the important thing in singers. When the intercostal muscles are used in the case of singers they are apt to produce rough and jerky tones. Singers become accustomed to using the diaphragm and the abdominal muscles and their chests are always filled. You all have heard operatic singers and wondered how they could produce and sustain the high notes and pitch for such an extended time. This is due to their control of the diaphragm and belly muscles.

COMMUNICATIONS

To the Secretaries of the 63 Component County Societies of the Medical Society of the State of Pennsylvania:

Dear Secretary: This communication voices the resolutions of the American Medical Association and the expressed wish of the Medical Society of the State of Pennsylvania that every member of the medical profession should become active in the campaign for periodic examinations of the healthy, or apparently healthy. These examinations are for the purpose of preventing them from getting sick by detecting tendencies or lesions and having them corrected, by prolonging life and making it more useful.

The method proposed is as follows, a method which should receive the sanction and active support of your County Medical Society and of every member therein:

Each doctor should write a personal note to patients he has not examined recently, suggesting that they come for a health examination to determine just where they stand, and stating that he is writing in compliance with the expressed wish of the American Medical Association, the State Medical Society and other public health agencies.

These examinations should be repeated frequently during infancy and at or past middle age, how frequently each doctor can decide as the individual presents himself.

Appended you will find a brief outline of the minimum requirements for such an examination. In individual cases special lines of investigation will be needed, often requiring laboratory help, and it is suggested that your Society formulate and arrange for such of these as may be needed.

For these health examinations your County Medical Society could properly fix the charge, which, of course, would not include the special examinations. For those too poor to pay, your Society could arrange with the hospitals or other institutions. It is desirable that this effort should be conducted by organized medicine, free from the taint of commercialism, and yet not putting upon doctors, already heavily overladen, an added burden bringing no compensation other than that of serving others.

As a part of the activity of your Society, one or more members should be appointed to conduct a publicity campaign, who will have the need of these examinations carried to the people by the Church, the Schools, the Newspapers, Labor and Fraternal Organizations and Big Business.

The number of these preventive examinations should be reported at each meeting and the gross number sent to the Secretary of the Committee undersigned.

GENERAL INDICES FOR HEALTH EXAMINATIONS

MINIMUM REQUIREMENTS

1. The examination should preferably be made in the afternoon, and in both standing and sitting positions.
2. The personal history, including height, weight, occupation, previous illnesses, etc., should be satisfactory.
3. Inquiry should be made into the family history.
4. The personal habits—exercise, recreation, diet, etc. should be healthful; rest and sleep regular.
5. Mental condition should be normal, and if not, an effort should be made to determine the cause.
6. Posture should be erect without effort, chest high, abdomen held well in. No malformations.
7. No painful feet; shoes well fitted.
8. A temperature above 99° F. or 37.2° C. would arouse suspicion of infection—other things being ruled out, possibly tuberculosis.
9. The appetite should be good, bowels regular, and tongue clean. No loss of weight.
10. Heart regular, with no murmurs. After hopping 25 times on one foot, the heart should return to normal in 2 minutes.
11. No shortness of breath on slight exertion.
12. Blood-pressure should not exceed systolic 145, diastolic 80.
13. Chest free from râles and abnormal breathing sounds. Respiration about 18 to the minute.

14. There should be absence of dullness over chest area, except over heart and liver.
15. Liver normal in size and free from tenderness and hardness.
16. Palpation of abdomen should reveal freedom from tenderness and absence of tumors.
17. No hernia—umbilical, inguinal or femoral.
18. Urine should be yellowish or amber, with a specific gravity of 1.015 to 1.025. The specimen should be taken from the mixed urine of 24 hours. An average of three pints is normal.
19. There should be no albumin or sugar. Hellar test for albumin; Fehling or Benedict's for sugar.
20. No gout or rheumatism and no persistent headaches.
21. Inflammatory conditions known to result from focal infections indicate general impairment of health, and so-called rheumatic conditions of nerves, muscles and joints, for which no definite cause can be assigned, call for a careful search for focal infection — teeth, tonsils, sinuses, appendix, gall-bladder, intestines, genito-urinary tract.
22. No pyorrhea or alveolar abscess.
23. No adenoids, no enlarged or inflamed tonsils, no frequently recurring sore throat.
24. No large lymph nodes in the neck or elsewhere, no enlargement of the thyroid or other glands.
25. The hearing should be normal. No running of the ears, no tenderness over the mastoids, no history of sinusitis. The nasal passages should be clean and nasal breathing habitual.
26. The vision should be normal or corrected with glasses.
27. The teeth should be carefully cared for by a competent dentist.
28. The skin should be moist, elastic and free from eruptions; the muscles firm and normally developed.
29. No venereal disease.
30. No absence of pupillary reaction to direct light (an early symptom of tabes).
31. The patellar tendon reflex should be normal.
32. No prominent varicocele, no hydrocele, no prominent varicose veins.
33. No hemorrhoids, no fistula or fissure.
34. In the female, if postpubertal, menstruation should be regular. Menopause characterized by long intervals between menstruation, with no discharge in the intervals.
35. There should be no suspicion of disease of the breasts, uterus, or ovaries, or, if a mother, of lacerated perineum.

In Pennsylvania during 1922, the death toll of kidney disease was 9,155, of tuberculosis 7,940, of diabetes 1,414, of cancer 7,759, and of various forms of heart disease 16,107. All of these, if detected early, may be retarded, arrested or even cured.

The examination should be followed by correction of existing irregularities, correction of faulty living — regulation of diet, exercise, etc.—and reference, when indicated, to a well-trained specialist—dentist, lung or heart specialist, or whatever may be needed.

Frequent findings needing treatment are faulty vision, teeth, tonsils, adenoids, circulatory disorders, pulmonary affections, malnutrition, constipation, and in women, menstrual irregularities or lacerations.

The examining physician should make notes for future reference.

Edward Martin, *Chairman,*
Frederick L. Van Sickle, *Secretary,*
For the Committee on Public Relations.

NEW AND NONOFFICIAL REMEDIES

Skiabaryt for Oral Administration.—A mixture of Barium Sulphate-Merck for X-Ray Diagnosis, 75 to 85 per cent mixed with sugar, tragacanth, vanillin, cinnamon and cacao. A smooth mixture is made with water and this is then ready for drinking. Merck & Co., New York City. (*Jour. A. M. A.*, May 12, 1923, p. 1381.)

Skiabaryt for Rectal Administration.—A mixture of Barium Sulphate—Merck for X-Ray Diagnosis, 75 to 85 per cent admixed with sugar, tragacanth, vanillin and cinnamon. A smooth paste is formed by addition of water and it is then ready for administration through the irrigator. Merck & Co., New York City. (*Jour. A. M. A.*, May 12, 1923, p. 1381.)

Neutral Acriflavine—Abbott.—A brand of neutral acriflavine—N. N. R.—It is sold in substance and also in the form of Tablets Neutral Acriflavine—Abbott, 0.03 Gm. and Enteric Coated Tablets Neutral Acriflavine—Abbott, 0.03 Gm. The Abbott Laboratories, Chicago, Ill. (*Jour. A. M. A.*, May 19, 1923, p. 1455.)

Quinine Ethyl Carbonate.—The quinine ester of ethyl carbonic acid. Quinine ethyl carbonate was first introduced as euquinine. It is used in place of quinine sulphate and similar soluble quinine salts when a practically tasteless quinine compound is preferred.

Arsphenamine—Mallinckrodt. — A brand of arsphenamine—N. N. R. (See *New and Nonofficial Remedies*, 1923, p. 46.) It is marketed in ampules containing respectively, 0.1 Gm., 0.2 Gm., 0.3 Gm., 0.4 Gm., 0.5 Gm., 0.6 Gm. and 1.0 Gm. Mallinckrodt Chemical Works, St. Louis, Mo.

Cinchophen—M. C. W.—A brand of cinchophen—N. N. R. (See *New and Nonofficial Remedies*, 1923, p. 90.) Mallinckrodt Chemical Works, St. Louis, Mo.

Mercuric Cyanide—M. C. W.—A brand of mercuric cyanide—N. N. R. (See *New and Nonofficial Remedies*, 1923, p. 194.) Mallinckrodt Chemical Works, St. Louis, Mo. (*Jour. A. M. A.*, June 16, 1923, p. 1775.)

Iletin (Insulin—Lilly).—A brand of insulin. (See *Jour. A. M. A.*, June 2, 1923, p. 1617.) It is marketed in 5 Cc. ampules containing 10 units in each Cc., and in 5 Cc. ampules containing 20 units in each Cc. Eli Lilly & Co., Indianapolis, Ind. (*Jour. A. M. A.*, June 23, 1923, p. 1851.)

Epinephrin Chloride Solution—Abbott.—A solution containing epinephrin chloride, equivalent to 1 part of epinephrin in 1,000 parts of physiological solution of sodium chloride, preserved by the addition of benzoic acid and saturation with carbon dioxide. For a discussion of the actions, uses and dosage of epinephrin, see *New and Nonofficial Remedies*, 1923, p. 112. Abbott Laboratories, Chicago, Ill. (*Jour. A. M. A.*, June 30, 1923, p. 1910.)

Calcium Therapy in Tuberculosis.—From a review of the literature, Mayer and Wells concluded that there is no convincing clinical evidence of the value of calcium administration in tuberculosis. They believe that no deficiency in blood calcium exists in tuberculosis patients. From carefully controlled animal experiments these investigators conclude that calcium administration does not affect the course of tuberculosis in animals. If the use of calcium compounds in the treatment of tuberculosis is to be continued, clinical experiments of a scientific character should be conducted. At the present time there appears to be no scientific basis for the use of calcium in tuberculosis. (*Jour. A. M. A.*, June 2, 1923, p. 1619.)

HOWARD C. FRONTZ, M.D.

THE ATLANTIC
MEDICAL JOURNAL

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SEPTEMBER, 1923

EDITORIALS

PRESIDENT-ELECT FRONTZ

Howard Clinton Frontz, President-Elect of the Medical Society of the State of Pennsylvania was born in Hughesville, Lycoming County, Pennsylvania, September 8, 1871, the son of George Clinton and Emma Kistner Frontz; his ancestry being of Swiss extraction but for several generations resident in Lycoming County. He attended Pennsylvania College at Gettysburg, Pa., from 1887 to 1890 and was a member of Alpha Tau Omega fraternity at that place. He studied medicine at the University of Pennsylvania, was a member of the Stille Medical Society during his undergraduate days, and received his medical degree from that school in 1894. Following his graduation he was resident physician at the Williamsport City Hospital till July, 1895. and from that time until 1908 he was physician to the Pennsylvania Industrial Reformatory at Huntingdon.

Since 1908 Dr. Frontz has been engaged in the general practice of medicine and surgery in Huntingdon. He has been an attending surgeon, a trustee, chairman of the training school committee of the Blair Memorial Hospital since its inception in 1909, and holds numerous appointments from railroads and industrial plants in central Pennsylvaia. He has been County Medical Director for Huntingdon County and physician in charge of Clinic 47, Pennsylvania Department of Health, since 1908, and is a member of the Advisory Board of the Pennsylvania Department of Health and of the Board of Trustees of the Pennsylvania Industrial Reformatory. During the entire period of the World War he was secretary and examining physician on the local Board of Selective Service for the County of Huntingdon.

Dr. Frontz has served in the Huntingdon County Medical Society as president in 1897, from 1902 to 1911 as secretary, and as a frequent contributor of scientific papers. He has served the Medical Society of the State of Pennsylvania as secretary of the nominating committee at the 1896 session, frequently in the house of delegates, and from 1918 to 1922 as Trustee and Councilor for the Fifth District. During the year since October, 1922, President-Elect Frontz has traveled widely over the state in response to numerous invitations to attend meetings of the component county societies. He holds Fellowship in the American Medical Association, the American Public Health Association, and the American College of Surgeons.

In 1895 Dr. Frontz married in Hughesville, Pa., Miss Agnes Springer, who died in 1900. In 1903 he married Miss Jessie Akers, of Huntingdon, a talented vocalist and a woman of charming personality. There are three children, a son and a daughter by the first marriage and a son by the later marriage.

Dr. Frontz is prominent in the Masonic Fraternity, holding past official honors in the lodge, chapter, and commandery, and for the past twelve years has been District Deputy Grand Master of the 34th District, Grand Lodge of Pennsylvania, Free and Accepted Masons. He is a Rotarian, a member of the Huntingdon Club, the Huntingdon Country Club, a Lutheran, and a Republican. C. G. B.

THE ANNUAL CONVENTION

Not one physician in the state can really afford to miss the annual convention of the State Medical Society. Each individual must make the decision which it is hoped will be a favorable one, so as to be numbered among those present at Pittsburgh from October 1st to 4th.

It is rather hard to sit down, especially when tired and desiring relaxation, to try and read the new books and periodicals and keep abreast of the times. The Medical Society was formed to help all. The papers in the general meeting and in the various sections on special subjects cover the whole field of medical progress. Examine the program and choose the subjects you want to hear read and discussed, and you will have an excellent postgraduate course and in addition the pleasure of renewing old acquaintances and forming new ones.

The officers of the State Society and the Allegheny County Society are bending every effort to give all visitors a thoroughly enjoyable and instructive week. Make your reservations early.

G. H. C.

OVERTURES TO THE HOUSE OF DELEGATES

The Secretaries of the County Medical Societies are reminded that now is the time for them to review the minutes of meetings held since the last session of the State Society so that they may put in concrete form any action of the local society which it is desired to present at the next State meeting which will be held in Pittsburgh on October 1-4, 1923.

It would not be amiss to have an account of such action forwarded to the State Secretary at once so that general discussion of various topics may be had preliminary to the time of the meeting.

A. C. M.

OUR EDITORIAL STAFF

No matter how much a man "hates himself" editorially, he must realize that the task of editing this Journal is by no means a one-man job, that it is a job for the combined efforts of the many who have at heart the interest of the publication.

As we look back over the past year, we feel that the *Pennsylvania Medical Journal,* more recently the Atlantic Medical Journal, has improved in its editorial output over that of the last few years. The silent reverence with which our many readers peruse its pages—silent because we seldom hear from them—is the indubitable proof from which we gain the satisfaction of knowing that our work is appreciated! This satisfaction might not be sufficient for those who prefer a more outspoken opinion; Nevertheless we believe that the work of the past year has not gone for naught.

At this point we wish to pause and express to the Assistant and Associate Editors of the new Atlantic Medical Journal our most sincere thanks for their splendid coöperation with the Editor and the Committee on Publication in the work of the Journal, for their many well-written, instructive and entertaining editorials presented during the past year. Were it possible to offer a more substantial remuneration than our thanks, it would afford us much pleasure thus to reward our friends and colaborers. We trust that our staff will not weary in well doing, but will make the future of the Journal brighter than the past by greater achievements in their editorial output.

CAMPING GROUNDS FOR TOURISTS

Many cities and towns located on the main automobile highway lines have set aside camping grounds for tourists which, at this season of the year, are bound to be well patronized.

It is very important that location of such sites shall be made with the view of avoiding possible contamination of water sheds that may in turn convey infection to communities which draw their water supply therefrom. This matter is of great importance and should be acted upon by the County Medical Societies in coöperation with the local health officers. It would also seem to be advisable for the State Commissioner of Health to have such camping grounds inspected by State Inspectors.

A. C. M.

THE PRESIDENT'S HEALTH

Certain periodicals have recently published pictures of a number of our Presidents, showing them when they assumed the Presidency and at the end of their terms. Naturally a man of fifty years plus would age to some extent in four to eight years, but we must admit that the mere passing of time would not account for the change in any of these men.

It has been charged that as truly as McKinley was martyred, so also was Harding martyred by the constant heckling that we kind-hearted Americans hold as one of the rights accorded us by our traditional liberty—martyred by the constant opposition and misrepresentation of his motives and accomplishments, by the obstructive tactics so often employed by his political opponents, by the ever present criticism that we have become accustomed to think of as the natural atmosphere surrounding our President. Surely we, his constituents, have something to answer for; but in the meantime, until we can learn to show more respect for the office (if not for the officer) once the President has taken his oath, until we can learn that freedom does not mean freedom to make our lawfully elected representatives miserable, to hamper their plans for government, to torment them until life becomes so impossible that even a strong constitution must feel the terrible strain, and a weaker one must break—until that time, what can be done to lessen the casualties in the Presidency?

Politicians have come forward with a proposition to limit tenure of the office to one term, giving as their reason the terrific strain under which the President labors. This is one possible solution of the problem. Another might be to lower the age of eligibility. This is the young man's age, not because the young man is as competent mentally to deal with the vexatious problems that every man in public life has to meet, but because the young man is stronger physically and therefore better able to cope with the growing strenuosity of public office. Other solutions may be suggested, but after all, is this not in a sense, a question of public health, is it not a question for the doctor to answer? A sick President cannot be a competent President, and in matters of health, individual or public, it is surely the province of the physician to advise.

Sooner or later this problem must be solved. Let us turn it over in our minds, both as loyal citizens and as physicians, and when the time comes for the decision to be made, we can then speak with the authority of knowledge and be ready to present definite recommendations.

AN APPEAL TO RETURN

A constant warfare is being waged between the old and the new; constantly the old is being replaced by the new; but occasionally the new does not work out and is discarded, with a consequent reversion to nihilism or a return to the old.

What is taking place throughout our social structure is also taking place in medicine, and we purpose citing as examples the well-known and formerly much-used drugs, quinine and Dover's powder.

Quinine is obtained from the bark of Cinchona calisaya and Cinchona officinalis, and of hybrids of these and other species of Cinchona (Rubiacæ) containing not less than 5 per cent of the total alkaloids and at least 2.5 per cent of quinine.

Quininae Sulphas (U. S. P.) is most frequently used. Quininae Hydrochloras (U. S. P.) is, however, a more easily assimilated form of quinine, but without some of the more potent therapeutic effects. The dosage of quinine sulphate is given as 1 grain to 1 drachm. The physiological action of quinine is well known to the profession, and it is not necessary to call attention to all the physiologic actions of these drugs.

Dover's powder (Pulvis Ipecacuanhae et Opii, U. S. P.) consists of one grain each of powdered ipecac and opium, and 8 parts of sugar of milk. The average dose is grains 10. Its physiologic effects are also well known to the profession.

The older practitioners of medicine relied largely upon quinine and Dover's powder to relieve many of the acute febrile conditions, as well as to treat many other complications of disease in which these remedies were indicated. But what a change has taken place in therapeutics during the past two decades! With the discovery and introduction of the coal tar products, synthetic preparations were accepted and placed on the market to reduce temperature as well as to abort incipient colds. With the development of pharmacology, the alkaloids of opium have taken the place of the old time Dover's powder formula. These preparations are more palatable to take and more prompt in their effect, but are they more to be desired in the real results which we wish to obtain?

Quinine is yet the specific for malaria and no doubt always will remain so. Quinine, however, is not the most pleasant remedy, but it has such physiological actions that it is doubtful if as good effects can be obtained by any other remedy, especially remedies of the coal tar group.

It is a well-known fact that many of the younger members of the profession are becoming therapeutic nihilists, perhaps because of the fact that older remedies have been abandoned, while those who have been in the practice of medicine for many years are quite positive these neglected remedies are of great benefit. Old drug friends have been cherished by the older members of the profession, and it is a well-known fact that the newer preparations are not so constant and are more frequently changed in therapeutic use.

Would it not be wise for us to retrace our steps and study more carefully remedies that were used extensively some years ago, bringing them again to the front in the treatment of disease? We are quite sure that a more careful analysis of some remedies which have been relegated to the rear in medical use could have a place in the present therapeutic treatment of disease were they better understood and more frequently used.

THE BUSINESS SIDE OF THE MEDICAL PROFESSION

THE COUNTRY DOCTOR; WHAT OF HIM?

For some years the trend of physicians has been to the city and large town, and from the present outlook the old time country doctor will soon be, if he is not already, a thing of the past. The country and small town have little or no attraction for the recent graduate, and if through force of circumstances he locates in the country he seizes the first opportunity to leave the country for the city, hence the cities are often overcrowded and the country places suffer for want of doctors. There are plenty of doctors to supply all the necessities of the public, but they are not properly distributed; some localities have too many, others not enough. And right here let me say that a pernicious idea has arisen, fostered by some medical men who ought to know better and originating in the fact that some rural communities are lacking in competent medical service, that there is a great dearth of physicians and that something radical must be done to correct the alleged evil. This idea has gone so far that law-makers have gravely considered the advisability of enacting laws looking toward the lowering of the requirements for the medical degree and making a lower standard for physicians desiring to practice in the rural districts. This is bad enough, but worse than this the votaries of the various healing cults, Osteopaths, Chiropractors and all that sort of thing, have exploited the idea in order to get full privilege to practice medicine without the necessary medical training and preliminary education. It is the plain duty of medical men and the medical press to disabuse the minds of the profession of this pernicious doctrine and through them to educate the public to the fact that there are enough medical men but that they are not properly distributed.

The old time country doctor had his problems and they were serious enough, but they were very different from the ones that confront the modern physician who locates in the country today. As a rule he was assured of a living from the start, and although his fees were small and were often paid in produce, they were sufficient for his necessities. The cost of living was moderate and his other expenses were not great. One or at most two horses, a saddle, and if his exchequer afforded it, a buggy, furnished the necessary transportation. Educational demands were not great, the country school and perhaps a term or two at an academy was sufficient preliminary education for the study of medicine, and this, supplemented by "reading" medicine with a practicing physician known as a "preceptor," constituted all that was necessary in order to matriculate at a medical college. Parenthetically it seems to me that a mistake was made when the preceptor was dropped as a part of the training of the medical student. The necessary expense of acquiring a medical education was vastly less than it is now. One or two terms of four months each at the "Lectures" was sufficient to enable the candidate to practice medicine. (A degree was not always sought or obtained.) Compare this with the requirements for obtaining a medical degree to-day. A high school and college preliminary education, four years in medical school, a year in a hospital and a state board examination—all this at an expense of at least twenty times the cost of the old time doctor's education. The old time doctor's work was hard but his standing in his community was high and his lot was a rather pleasant one.

The situation to-day is quite different. The problems of the modern country doctor and of the student who expects to take up country practice are many and complex. Some of these problems are here mentioned and an attempt made along the line of their solution. As intimated, a very important problem for the student of medicine is the cost of a medical education, but that is a problem for individual solution.

Another important problem is the question of fees. The cost of living has greatly increased. Food, clothing, rent, equipment, transportation, the education of his children, the cost of his medical education (for a part of which perhaps he is in debt) all have increased in a much greater ratio than have his fees. We may ask why have his fees not increased as they should? The answer is that his practice is among farmers and farm laborers. The business of farming is in a very depressed state. The farmer is not making a living. He is not able to command the best labor, sometimes no labor at all, and his crops are damaged or are lost for want of help to harvest them. The price of farm produce is at a low ebb, and in many cases below the actual cost of production, and the farmer, after paying for such help as he can get and for the absolute necessaries of life for himself and family, has nothing left to pay the doctor adequate fees, so that he is the last one paid and frequently is never paid. The farm laborer is in even worse straits than is the farmer himself and as a result the country doctor is in a chronic state of financial embarrassment and cannot help himself abreast of the profession to say nothing of attending postgraduate courses and medical conventions.

Transportation is one of his problems that at first sight would appear is solved by the automobile, but the automobile has only added to his expenses. No one cares to-day to employ a doctor who does not own a motor car even if it be only a flivver. The motor car is quite the thing in summer when the roads are at least passable, but in winter, when the roads which most rural communities provide are often impassable for horse and buggy, the use of the automobile is out of the question and the doctor must have in addition to his machine a team of horses and a buggy, thus doubling his necessary traveling expenses. The city doctor can visit his patients at less than half the expense of the country physician. The automobile is in some respects an actual detriment to the rural doctor. For instance: he can cover a much wider territory in summer than he can in winter, and patrons who employ him in summer resent the fact that he cannot attend them in winter and he loses their patronage. Another thing is that the well-to-do among his patients who possess automobiles will often drive to some distant doctor, perhaps some self-styled specialist and pay him a good fee that by rights should go to the home doctor who, nine times out of ten, would render better service than the "specialist." And further, there is a very reprehensible practice growing up among city physicians which consists of underhand if not direct solicitation of the practice of the wealthier families of the country doctor. This is a much greater evil than that of fee-splitting of which we have heard so much in the past, and it is much more detrimental to the country doctor.

The hospital question is a vital one. As it is now, if the country doctor takes a patient to a hospital in the city the surgeon gets the big fee, and after the hospital costs are paid there is often little or nothing for the home doctor. Worse still, some surgeons try to retain the patient and very often succeed, thus cutting in on the doctor's already scanty income.

Another problem is the education of the doctor's children. You say there are many high schools in the rural districts. True; but when you have said high school you have said all there is to be said of them. So it is not correct to say he has high school opportunities for his children, let alone those of college or university. The latter are beyond his means. All he really has is the common school.

Then there is the lack of loyalty among his clientele. They visit specialists, so-called, when the roads are good and the weather is fair, and pay cash; but when the nights are dark, the roads bad and the weather inclement, they call the home doctor and perhaps never pay him. The following has been known to occur. The home doctor is called in the night (the other fellow will not travel to the country at night) and when the home doctor calls on his patient the next day he finds the other doctor in charge of the case. This is the kind of loyalty he has to contend with. These are some of the reasons why so many cross-roads and country villages have no doctor. They have no one to blame but themselves. Within twenty miles of this place there are half a dozen villages that formerly supported from one to three doctors that are without a physician to-day.

To recapitulate: The reasons why the country doctor will not stay in the country are these: the inadequate fees, the bad roads, the hard work, the lack of hospital accommodations, the insufficient educational opportunities, but above all the lack of loyalty on the part of his patients.

What is the remedy? I mention the proposed plan of providing a house for the doctor only to condemn it. The people who gave him the house would think they owned him and would make life miserable for him. There is only one harder taskmaster in the world than the man who pays his doctor and he is the man who never pays and who never intended to pay. The country districts have the remedy in their own hands. When they pay the doctor adequately and promptly, build good roads, provide sufficient hospital accommodations, make the high school what it should be, and above all be loyal to the home doctor; then, and then only, will the rural districts be able to secure competent medical men. Let them do these things and the old time country doctor will again appear and there will be no more complaint of a dearth of rural physicians.

Claysville, Pa. C. C. Cracraft, M.D.

BUBBLES

No business could long survive with a turnover of directors, staff and policy every four years. Why then do we ask the impossible of our government?

Can't somebody invent an x-ray that will show up the bones in a man's soul as well as those in his body? It would be a useful test to try on some of our ambitious politicians.

One thing the general practitioner can be thankful for is that his job is secure. He is getting so scarce that he will soon be able to demand union wages.

Heard in passing: "The doctor says I have this here blood pressure." This remark must be a first cousin to the doctors' favorite expressions, such as: "He had an acute abdomen and I operated him yesterday." It behooves us to be careful; English is dreadfully "catching."

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg., Pittsburgh, Pa.

ANNUAL REPORTS

This issue of the JOURNAL carries to each member of our Society a more or less detailed report of the year's official actions of your Secretary, Executive Secretary, Treasurer, and nine Trustees and Councilors, and the activities of ten standing or special committees. These officers have received, disbursed and invested approximately $75,000 of your money, edited and published your JOURNAL, and reviewed the year's work in your sixty-three component county societies. The committees have represented you before the state Legislature and before the citizens of Pennsylvania.

These published reports are to be approved or disapproved by the 1923 House of Delegates. In our democratic organization you are represented in the House of Delegates. Acquaint yourself with the contents of the year's reports and convey to your delegates your own suggestions for curtailment or extension of expenditures or service.

THE SECRETARIES' CONFERENCE

Our Eighteenth Annual Conference of County Society Secretaries will be held in Pittsburgh on Tuesday, October 2, 1923, at 5 p. m. The program, which is published elsewhere in this issue, contains three papers dealing with the creation and enforcement of good public health laws and two subjects devoted to the administration of medical society affairs. The secretaries are at home at these conferences and always look forward with pleasure to meeting State Society officers and all members of the State Society who have any interest in the economics of medical organizations.

Ninety minutes' time will be given for the reading and discussing of the five papers, after which dinner will be served. The Conference and dinner will provide nicely for your time between the close of the Tuesday afternoon scientific sessions and the smoker.

Opportunity will be presented at the registration desk for all who desire to make reservation for the dinner.

REDUCED RAILROAD FARES TO PITTSBURGH

Members traveling by rail to Pittsburgh should be sure when purchasing their going ticket to request a certificate, *not a receipt.* Immediately upon arrival at the Pittsburgh session the certificate should be presented for endorsement by the Secretary of the State Society at the Registration Desk. If two hundred and fifty certificates, the necessary minimum, are presented and duly validated, those holding same will be entitled to a return ticket, up to and including October 9th, at one-half the regular one way fare from the place of meeting to the point at which the certificate was issued.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to August 15th:

CUMBERLAND: *New Member* — Richard R. Spahr, Mechanicsburg.

DELAWARE: *Reinstated Member*—William B. Evans, 320 E. Ninth St., Chester.

ERIE: *New Member*—Henry L. Stem, Union City.

FAYETTE: *Reinstated Member*—R. C. Hough, High House.

FRANKLIN: *New Member*—Royal H. McCutcheon, White Pine Sanitarium, Mont Alto.

LANCASTER: *New Members*—Dexter W. Draper, 127 E. Orange St.; Norman E. Snyder, 226 E. King St., Lancaster.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since July 19th. Figures in first column indicate county society numbers; second column, State Society numbers:

July 19	Adams	24		7222	$5.00
	Venango	55		7223	5.00
21	Cumberland	35		7224	5.00
23	Venango	56		7225	5.00
25	Erie	135		7226	5.00
27	Lancaster	128	(½ year)	7227	2.50
28	Cumberland	36	(½ year)	7228	2.50
30	Franklin	53	(½ year)	7229	2.50
	Fayette	117		7230	5.00
Aug. 6	Fayette	118		7231	5.00
Aug. 11	Delaware	87		7232	5.00

APROPOS THE PITTSBURGH SESSION

THE PROGRAM

With the passing of the summer naturally our thoughts are directed to our work for the fall and winter and the preparation we should make to meet some of the perplexing cases that are sure to confront us during the coming months. For your consideration the Committee on Scientific Work has caused to be printed in the August number of the Journal the full program for the Pittsburgh Session, October 1-4, of the Pennsylvania State Medical Society. Read it, and read it carefully, and see if you can afford to miss any of these papers. The Committee has tried to present a program that is the equivalent of a postgraduate course, and have even gone a step further, when the intensive study of some of the subjects is taken into consideration.

If any one, by the time he has read these lines, should say to himself, "I have just returned from my vacation; I can't afford to be away from my practice any longer." Or, "What is the use of my going to the meeting? I can read the papers in the Journal." "The meetings are mostly dry and uninteresting; some long-winded fellow nearly puts you to sleep with his discussion." "The expense is too great," etc. Say, "Brother, Stop! Listen! Turn your car around; you are on the wrong road. Head your machine straight for Pittsburgh, October 1st, at the rate of 25 miles per hour. Drive up to the William Penn, park your car, and don't you dare leave town until you have heard the last word spoken on the subject of diabetes, Friday."

What do you know about the new treatment and management of these cases? The doctors who will speak do know and will try their best to enlighten you. Never in the history of the Society has there been such a galaxy of stars to present a subject from every angle.

So you are content to let your confreres be wide-awake, 100% physicians, while you remain at home and slump back into the "has been" class of 40% or less! Very well, when your friend across the street is called in consultation and is asked to direct the treatment of your diabetic case, then you will wish you had followed the other fellow when he headed his car for the Pittsburgh Session of the State Society.

OUR GUESTS AT PITTSBURGH

General Session

L. Wallace Ohl, D.D.S., is Assistant Professor of Exodontia and Anesthesia in the Dental College of the University of Pittsburgh. He is field agent for the dental clinics in Pennsylvania and neighboring states. He has written extensively on the subjects of dental focal infections, and anesthesia, and has done an unlimited amount of work dissecting the jaws on the cadaver in an effort to establish an anatomical basis for the technique of local anesthesia of the mouth.

John R. Caulk, M.D., is the Associate Professor of Genito-urinary Surgery, and Chief of the Genito-urinary Clinic of Washington University, St. Louis. He is also Editor of the *Interstate Medical Journal*, and Collaborating Editor of *Surgery, Gynecology and Obstetrics*, and the *American Journal of Syphilis*. Dr. Caulk has been a rich contributor of many important articles on genito-urinary surgery, and is recognized by the profession as one of the authorities in his branch of medicine. Among recent contributions, that dealing with ligation of the ureters, based upon a large amount of experimental work, is epoch-making. He is known for his ability to work hard and lucidly describe and explain his subject.

Medical Section

James P. O'Hare, M.D., of Boston, is probably better qualified to discuss the different phases of nephritis than any one now interested in that special work. His association with H. A. Christian. at the Peter Bent Brigham Hospital, combined with a natural ability to carry on original investigation, has placed him in the front rank, especially in "kidney work." His writings in *Oxford Medicine* and *The Medical Clinics of North America*, as well as his numerous contributions to medical periodicals, are familiar to all following this work. We feel that Dr. O'Hare's paper will be of unusual scientific interest to the section and a great addition to the general program.

GENERAL SESSIONS

Tuesday, 10 A.M.

Dr. Howard C. Frontz, Huntingdon, will deliver the President's Address which will be followed by a paper and lantern slides, "The Importance of Foci of Infection in the Mouth from a Dentist's Viewpoint," by L. Wallace Ohl, D.D.S. Dr. Ohl has had a wide experience in this line of work, and anyone who should be so unfortunate as to miss this paper will regret it. The concluding paper will be by Dr. Mary M. Wolfe, "The Laurelton State Village and Pennsylvania's Problem of Mental Deficiency," a subject too long neglected by this Society.

Wednesday, 9 A.M.

"Occular Manifestations from a Traumatic Encysted Hemorrhage in the Brain"; "Diagnosis and Treatment of Tonsillar Infection"; "The Relation of Cardiovascular Disease to Symptoms in the Abdomen"; and "House Dust in Asthma," are the four papers that will be presented before we come to the "Symposium on Anuria," which has been timed as nearly as possible at 10:30 A. M. in order to allow the members of the House of Delegates to attend. "Postoperative Anuria" will be discussed by Dr. Floyd Keene; "Calculous Anuria," by Dr. John R. Caulk, of St. Louis, (by invitation); and Dr. Edwin Sweet will take up the "Theoretical Discussion of Anuria" in a fifteen minute paper. The Program Committee is anxious that members who have had cases of anuria should briefly report them in the general discussion.

Thursday, 2 P.M.

Two State Papers—"Quarantine Laws" (5 minutes) and "Prevention of Diphtheria" (10 minutes) are the headliners for the Thursday afternoon session, when "High Voltage X-Ray in Cancer," which we hear so much about these days, will be considered. Lantern slides will help greatly in following the papers, "Surgical Reconstruction of the Nose," and "Poisoning of Children by Caustic Alkalies Sold in Grocery Stores." Dr. Chevalier Jackson was instrumental in having a bill put through the last Legislature for the protection of the public against caustic alkalies and will give his reasons for the same when presenting his paper. The concluding papers, "The Practical Use of Insulin in the Treatment of Diabetes," and "The Trend in Modern Obstetrics," will bring the scientific program to a close.

Have you forgotten that the general sessions were intended for all the sections? By what method of reasoning did you come to the conclusion that it was not necessary for you to remain and attend the same? Don't crank the car until Friday afternoon. You may annoy some one.

OUR GUESTS AT PITTSBURGH

Surgical Section

E. S. Judd, M.D., Rochester, Minnesota: Of the younger American surgeons none are more eminent than Dr. Judd. A native of Rochester, he returned to his home town following his graduation in medicine and at once came under the influence of the Mayos. For several years he was an assistant to Drs. W. J. and C. H. Mayo during the early development of the Mayo Clinic. There he was given an opportunity for a fundamental training in surgery such as has been the privilege of but few of our profession. With the marvelous growth of the Clinic, Dr. Judd soon became one of the chief surgeons and now for a good many years his operating room has been a Mecca for visiting surgeons from not only the United States but from foreign countries as well. A lucid and convincing speaker, an operator of great versatility and marvelous dexterity, attendance upon his clinics is always looked upon as a priceless privilege by those whose fortune it has been to visit Rochester. No field of surgery has been left untouched by him. For many years he has taken a special interest in surgery of the genito-urinary system and probably no surgeon in America has had greater experience with this branch of surgery. The Society is very fortunate in having Dr. Judd with us to present a paper in the Symposium on Surgery of the Kidney and Ureters.

Thomas S. Cullen, M.D., for thirty years has had charge of the gynecological pathological work in the Johns Hopkins Hospital, Baltimore. He has published over two volumes of short articles and the following books: Cancer of the Uterus, Adenomyoma of the Uterus, Myomata of the Uterus (with Howard A. Kelly), Diseases of the Umbilicus. For ten years Cullen did nearly all the general surgery at the Cambridge Hospital, a very inaccessible point on the Eastern Shore of Maryland. For years he has been Chairman of the Medical Board of the Church Home and Infirmary—the hospital in which Edgar Allen Poe died. He was one of the pioneers in starting the cancer campaign for the education of the laity as to the value of early diagnosis. Cullen has for years claimed that every surgeon opening an abdomen must be thoroughly equipped to deal with any and every lesion he may meet with in the abdomen. His work is in large measure limited to gynecology and abdominal surgery.

SECTION ON MEDICINE

Tuesday, 2 P.M.

Following the Chairman's Address there will be two papers, "Points of Contact Between Internal Medicine" and "Psychiatry and the Rôle of Nutrition in the Etiology, Course and Prevention of Mental Disorders," that should prove of timely interest to all internists. Then Dr. James P. O'Hare, of Boston, will read a paper by invitation on "Hemorrhagic Nephritis." No one can afford to miss this paper who is interested in the title. "Facts that Govern the Proper Diet in Nephritis" is a most important subject. After these last two papers Dr. Kolmer will give his "Recent Investigations Concerning Specificity and Practical Value of the New Complement Fixation Reaction in Syphilis." Last but not least on the program for the afternoon will be the paper of Dr. Permar of Pittsburgh, "The Interpretation of Lobar Pneumonia in the Light of Experimental Study."

Wednesday, 2 P.M.

The first paper should correct many of your ideas as to what you have been prone to call "Nervous Indigestion." Come hear it. Dr. Rehfuss will follow with a paper on "The Ambulatory Treatment of Gastric Ulcer," then the "Management of Cancer of the Stomach," by Dr. Sailer should give us all food for thought in the management of these stomach conditions. Two papers, one on the heart and blood-pressure—"Heart-Disease and Pregnancy," and "The Evaluation and Treatment of Abnormal Blood-Pressure" by Drs. Heard and Riesman will prove of great interest. "The Pathology of Diseases of the Pancreas," and "Consideration of Polycythemia, With a Report of Cases," brings the meeting to a close.

Thursday, 9 A.M.

"Management of Convalescence"; "The Importance of an Exact Diagnosis in Acute Articular Rheumatism"; "Diagnosis and Treatment of Pernicious Anemia and Severe Secondary Anemias"; "Blood Transfusion, Its Indications and Technique"; "Basal Metabolism: The Value of its Estimation"; "Treatment of Encephalitis"; and "Migraine, with Especial Reference to Paralytic Manifestations," are all papers of great interest and offer food for thought.

Some men go to State Meetings to attend the General and Section Meetings. Some men attend the Section Meetings, and never go near the General Meetings. Some men go to the State Meetings to play golf and never attend the General or Section Meetings. To which Class do Y-O-U belong?

SECTION ON SURGERY

Tuesday, 2 P.M.

The Chairman's Address will be followed by a paper, "Contraindications to Cholecystectomy." We predict a lively discussion when the question of drainage or removal of the gall-bladder comes to general discussion. "Recurrent Cholelithiasis" and "Treatment of General Peritonitis Following Ruptured Appendix" are the next papers for discussion. "Chronic Duodenal Obstruction" with lantern demonstration, will prove of interest as it is a new subject. "The Practice of Surgery under the Pennsylvania Compensation Laws," the last paper of the afternoon, is well placed on the program, as it will need lots of time for discussion.

Wednesday, 2 P.M.

Gynecology and Obstetrics are the subjects for this session, lined up under the head of a "Symposium On Pelvic Surgery." "Practical Points in Pelvic Surgery," by Dr. Cullen of Baltimore, "Preservation of the Ovaries in Pelvic Surgery," "A Review of the Present Status of Minor Surgical Procedures in Gynecology," "Surgical Treatment of Complete Uterine Prolapse," "The Present Status of Treatment of Carcinoma of the Uterus," and "Focal Infection as a Danger to the Pregnant Woman." A symposium always draws a crowd. Move up front and make room for the late comer.

Thursday, 9 A.M.

Symposium on Surgery of the Kidney and Ureter: Dr. Judd, of Rochester, Minn., will not need a formal introduction to the surgical section, as he is well known to all the members. His paper, "Surgery of the Kidney and Ureter," will be listened to with intense interest. "Modern Diagnostic Methods in Renal and Ureteral Surgery," "Treatment of Small Ureteral Calculus," with lantern slides, and "Treatment of Accidental Occlusion of the Ureter" complete the symposium. "Review of Five Years of Fracture Work with Special Reference to Open Reduction," with a lantern demonstration, brings the surgical section meeting for this year to a close.

Don't try to play golf while the scientific meetings are in progress. It is a psychological game. Your conscience will say when you are on the golf links, "I should be attending the General and Section meetings." Result: You dub the ball and miss your putt. The other fellow wins the hole. Moral; Stick to your knitting in the front row where you belong.

OUR GUESTS AT PITTSBURGH

Pediatric Section

Alfred F. Hess, M.D., New York City, is Professor of Clinical Pediatrics at the University and Bellevue Medical College (University of New York). Dr. Hess has been a notable author on pediatric subjects for many years. More recently he has made an intensive study of rickets and is now regarded as one of the greatest authorities on this disease.

Royal S. Haynes, M.D., New York City, is Professor of Clinical Diseases of Children at the College of Physicians and Surgeons (Medical Department of Columbia University). Dr. Haynes was for some years the editor of the *Archives of Pediatrics* and has contributed largely to Pediatric Literature. He is the attending pediatric physician to the Sloane Hospital for Women and the Children's Wards of the Bellevue Hospital. He is also consulting physician to the Willard Parker Hospital.

Section on Eye, Ear, Nose, and Throat Diseases

Edward Jackson, M.D., Denver, Colorado, is no stranger to Pennsylvania, as he was born in West Goshen, Chester County, Pa., and practiced in this state until 1898, when he removed to Denver. He is Editor of the *Ophthalmic Review,* the *American Journal of Ophthalmology* and a frequent contributor to medical literature on his specialty.

W. B. Chamberlin, M.D., Cleveland, Ohio, is Assistant Clinical Professor of Otolaryngology of the Western Reserve University School of Medicine, and Otolaryngologist to the Lakeside Hospital, Cleveland. He has just served as Chairman of the Ear, Nose and Throat Section of the American Medical Association, after having acted most efficiently as Secretary for five years. He is a Fellow of the American Laryngological, Rhinological and Otological Society and has been Vice-President of the Middle Western Section. He is a Fellow of the American Bronchoscopic Society, served as Vice-President of the American Laryngological Society in 1921, and has contributed extensively to the literature of the specialty.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

Tuesday, 2 P.M.

The first paper of this session is the Address by Dr. Sears, who has for several years acted most efficiently as secretary for the section, and now this year as Chairman. The standard he has set is well reflected in the programs of past years and this one. Without his aid our labors would have been burdensome. This is an afternoon of papers devoted to the eye, concerning "Vernal Conjunctivitis, Duration, Clinical Features, Prognosis, and Treatment"; "Personal Experience in the Management of Heterophoria"; "The Surgical Treatment of Squint, with Special Reference to the Choice of Operation Best Suited to an Individual Case"; "The Rôle of Impacted and Unerupted Teeth in Occular Disorders"; "Remarks upon the Removal of the Cataractous Lens with Presentation of an Instrument for Preventing Vitreous Loss"; and "Recurrent Hemorrhage Into the Vitreous."

Wednesday, 2 P.M.

"The Ophthalmoscope In General Medical Diagnosis" (by invitation), by Dr. Edward Jackson, of Denver, should prove of great interest to the section members and the medical men. Following this paper comes the Symposium on Sinus Thrombosis—three papers by Drs. deSchweinitz, MacCuen Smith, and E. W. Day, on "Etiology and Diagnosis of Lateral Sinus Thrombosis"; "Etiology and Diagnosis of Cavernous Sinus Thrombosis"; and "Treatment of Cavernous and Lateral Sinus Thrombosis."

Thursday, 9 A.M.

The first paper with lantern demonstration is "Bronchoscopic Treatment of Pulmonary Suppurations and Bronchial Asthma." Then the following: by invitation, Dr. W. B. Chamberlain, of Cleveland, will read a paper on "The Gradenigo Symptom Complex," a subject the members will all be most anxious to hear. "Foreign Bodies in the Respiratory Tract and Esophagus," with lantern demonstration; "The Present Status of Vestibular Tests from the Standpoint of the Otologist"; "Diagnosis and Treatment of Chronic Maxillary Sinusitis"; and "Diagnosis and Treatment of Vincent's Angina," will bring this section to a close for the year 1923.

Some men attend the State Meetings and never go near the Exhibitors. They are the "Joneses that help pay the freight." Without the exhibitors' aid the Trustees would have to add five dollars to the yearly dues of each member of the State Society to defray the expenses of the annual meeting. Oh, what a howl would go up if this should come to pass! All the Exhibitors want is for you to visit and talk with them and register, and look their exhibit over. What shall the answer be? Down in your jeans for five or walk in and visit them! A watchful eye will note your step. A word to the wise should be sufficient.

SECTION ON PEDIATRICS

Tuesday, 2 P.M.

"The Future of Pediatrics" by the Chairman, Dr. Gittings, will be the opening paper for this section. "Practical Heliotherapy"; "X-Ray Studies of the Chest in Infants and Children" (with lantern demonstration); "Anemias in Children"; "The Interrelationship Between the Health and Social Welfare of Children"; and "Jaundice of the Newborn" are subjects down for the initial meeting.

Wednesday, 2 P.M.

Two neurologic subjects will attract the attention of the members—"Essentials of a Neurologic Examination in Children" and "Essentials of a Psychiatric Examination in Children"; also "The Physician's Opportunity in the Prevention of Diseases of Childhood." By invitation Dr. Alfred F. Hess, New York City, will give a twenty minutes' demonstration with the lantern —"The Rôle of Ultraviolet Rays in Rickets." The two closing papers are: "Intradermal Vaccination" and "Cystinuria; Report of a Case."

Thursday, 9 A.M.

The closing session will consider the following subjects: "Acute Otitis Media and Mastoid Involvement," and "The Common Diseases of the Skin in Childhood." There are two papers on syphilis—"Clinical Aspects of Congenital Syphilis" (by invitation), Dr. Royal S. Haynes, New York City; and "Mechanism of Infection, Immunity, and Diagnostic Reactions in Congenital Syphilis," by Dr. John A. Kolmer, Philadelphia. "Mongolian Idiocy," and "Tonsillectomies from the Standpoint of the Pediatrician" conclude the section meetings.

When in Pittsburgh attending the State Society Meeting please avoid the seventh floor of the hotel, and room No. 7-11.

In conclusion it may be stated that never in the history of the Society has there been such a galaxy of medical stars assembled for a public meeting as we are to have on Thursday evening, and a rare treat is in store for those interested in the Insulin treatment of diabetes at the clinic. Thursday evening, Drs. F. C. Banting, Toronto, Canada, John R. Williams, Rochester, N. Y., and C. H. Newburg, Ann Arbor, Mich., will be the speakers; and Friday morning, October 5th, the Clinic program will be as follows:

1. Laboratory Aspects of Diabetes (30 min.), Dr. Banting.

2. Insulin in the Treatment of Diabetes (20 min.), Dr. Ordway, Albany, N. Y.

Chamber of Commerce Building

3. Insulin; Its Administration and Its Possible Dangers, Dr. Williams, Rochester, N. Y. (20 min.).

4. Diabetic Coma (20 min.), Dr. Allen R. Jones, Buffalo, N. Y.

5. Diet and Diabetes (20 min.), Dr. Newburgh, Ann Arbor, Mich.

6. Surgery and Diabetes (20 min.), Dr. John A. Lichty, Pittsburgh.

The Society is to be congratulated that the local Committee on Arrangements, under the direction of Dr. Harold Miller, Chairman, has provided such a treat for the public meeting Thursday evening and the Clinic on Friday morning, and our hats should be off to these men who have consented to come from afar, and give their time for our benefit.

In what way can I show my appreciation? Attend both meetings.

T. G. Simonton, *Chairman,*
Committee on Scientific Work.

COMMITTEE ON SCIENTIFIC EXHIBITS

Dr. S. R. Haythorn, Chairman, 5431 Baywood St., Pittsburgh.
Dr. V. L. Andrews, Pathologist, West Penn Hospital.
Dr. A. J. Bruecken, Pathologist, St. Francis Hospital.
Dr. G. W. Grier, Rœntgenologist, Magee Hospital.
Dr. E. W. Goodpasture, Pathologist, Singer Memorial Research Laboratory (by invitation).
Dr. D. Hooker, Department of Anatomy, University of Pittsburgh.
Dr. J. F. McCullough, Rœntgenologist, St. Francis Hospital.
Dr. F. C. Narr, Pathologist, Passavant Hospital.

Fourth Avenue
"The Wall Street of Pittsburgh"

Dr. W. B. Ray, Rœntgenologist, Allegheny General Hospital.

Dr. DeW. G. Richey, Pathologist, Mercy Hospital.

Dr. R. V. Robinson, Rœntgenologist, Mercy Hospital.

RULES GOVERNING SCIENTIFIC EXHIBITS

1. The purpose of the exhibit shall be one of education and not of competition and advertisement.

2. The specimens shall be placed in the exhibit according to organ or tissue and not with reference to hospital or individuals.

3. It was decided that the following groups of exhibits be arranged, each one with reference to: (a) anatomical specimens, (b) pathological specimens, (c) x-ray plates and photographs, (d) gross and microscopic pictures.

The following groups of organs and tissues will be included:

(1) Head: Brain, brain tumors, sinusitis, etc.

(2) Chest: Heart, arteries, lung pathology.

(3) G. I. Tract: Stomach, intestines, pancreas, liver.

(4) G. U. Tract: Kidney, bladder.

(5) Bone Defects: Osteomyelitis, bone syphilis, bone tumors.

4. All persons intending to exhibit specimens shall reply in letter stating the approximate number of specimens of each variety they intend to submit and this letter shall be in the hands of the Committee by September 15th.

5. All specimens must be in the hands of the Committee by noon on Monday, October 1st.

6. All pathological specimens must be preserved and mounted in suitable, permanent form.

7. The Committee reserves the right to exclude from the exhibit any specimen which is considered unsuitable, either because of too much reduplication, too great prominence of name of exhibitor, or incompatibility with the rest of the exhibit.

HOTEL RESERVATIONS

The William Penn Hotel (Headquarters) reports that the registration of members attending the State Society Session is larger at this date than on any previous occasion. The Management requests the Hotel Committee to impress upon the members of the Medical Society of the State of Pennsylvania who have not already made reservations, to do so at once.

Instructions for making hotel reservations appeared on page 615 of the Atlantic Medical Journal for June, together with names of the Hotel Committee of the Allegheny County Medical Society, a list of hotel rates and an application blank for hotel accommodations, which will be found on page 616 of the same Journal.

PLACES OF INTEREST IN PITTSBURGH

The Block House, Lower Penn Avenue, near Point Bridge, is the oldest building in Pittsburgh, built in 1759, and the only historic relic of Pittsburgh's Colonial days.

Carnegie Institute, Schenley Park and Forbes St., is the largest and finest institute of art and museum of natural history in the United States.

1—Schenley Park Swimming Pool
2—Schenley Farms District
3—Masonic Temple

5—Capt. Alfred E. Hunt Artillery Armory
4—Soldiers and Sailors Memorial
6—Syria Mosque
7—Pittsburgh Athletic Association

1—Carnegie Steel Co., Duquesne Blast Furnace

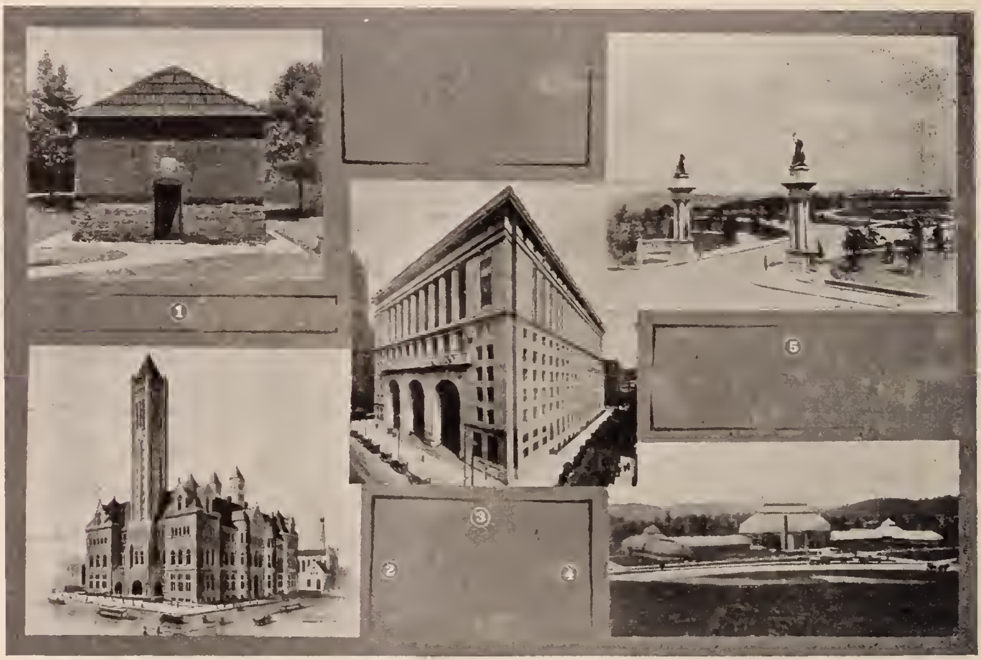
2—Carnegie "Tech"

3—"The Point"
Confluence Allegheny and Monongahela Rivers to form the Ohio

5—Allegheny Observatory

4—Union Station (P. R. R.)
6—Schenley Apartments

7—Panther Hollow Lake (Schenley Park)



1—Col. Bouquet's Blockhouse 3—City-County Building 5—Entrance Highland Park

2—Allegheny County Court House 4—Phipps Conservatory, Schenley Park

Memorial Hall, 5th Ave. and Bigelow Boulevard, erected in memory of Soldiers, Sailors and Marines of Allegheny County who served in the Civil War.

Phipp's Conservatory, Schenley Park, contains a splendid display of flowers and plant life.

University of Pittsburgh, north of 5th Ave., opp. Schenley Park, consists of 13 schools, including schools of Chemistry, Medicine, Dentistry and Pharmacy. It has an enrollment of over 4,000.

Highland Park Zoölogical Gardens, Highland Park, contains a varied and extensive collection of animal and bird life.

Allegheny Observatory, Riverview Park, founded in 1859, is one of the foremost in importance of work done and astronomical discoveries accredited.

Carnegie Institute of Technology, Schenley Park, is one of the finest institutes of technology in the United States.

Stephen C. Foster Memorial Home, 3600 Penn Ave., is the birthplace of Stephen C. Foster, composer of "My Old Kentucky Home," and many other familiar songs.

The Pennsylvania College for Women, 5th Ave. and Woodlawn Road, was founded in 1869 to meet the need of an institution of higher learning for women maintained under distinctly Christian influence, although it is now undenominational.

SOME RARE OPPORTUNITIES

Arrangements for Thursday evening activities during the State Convention are practically complete.

Preceding the Symposium on Diabetes, open to the public, at which Drs. Banting, Williams and Newburgh will speak, there will be a subscription dinner at the new University Club.

Tickets for the dinner will be offered to the profession of Western Pennsylvania by mail and will be available at the Registration Desk or Information Bureau for visiting members and guests from other sections of the State.

Every member of the Society having diabetic patients is urged to inform them of the opportunity to see and hear, without charge, Dr. Banting, Thursday evening, October 4, 1923, at Carnegie Music Hall, Pittsburgh. Upon request and the promise to use them, reserved seat tickets will be sent for physicians and their patients. Reserved seats, however, must be occupied by 8 P. M. After this time all seats will be thrown open.

It will be well worth delaying the customary Thursday afternoon exodus from the State Convention. The dinner in the beautiful and spacious new University Club promises to be a delightful gathering and it is certain that the Symposium on Diabetes will be excellent.

On Friday morning, October 5, 1923, one of the attractions will be the clinic on Diabetes, the program following:

I. Laboratory Aspects of Diabetes .... Dr. F. G. Banting, Toronto, Canada. (30 minutes)
II. Insulin in the Treatment of Diabetes........ Dr. Thomas Ordway, Albany, N. Y. (20 minutes)
III. Insulin: Its Administration and Its Possible Dangers .....Dr. John R. Williams, (20 minutes) Rochester, N. Y.
IV. Diabetic Coma ....Dr. Allen A. Jones, (20 minutes) Buffalo, N. Y.
V. Diet and Diabetes ......Dr. L. H. Newburgh, (20 minutes) Ann Arbor, Mich.
VI. Surgery and Diabetes ....Dr. John A. Lichty, (20 minutes) Pittsburgh, Pa.

The amphitheatre at Mercy Hospital has space for approximately two hundred and every inch of space should be occupied during this exceptional clinic on diabetes.

Mark this part of your program in red:

Thursday, October 4, 1923, 6 P. M., Dinner for Dr. Banting at University Club; 8 P. M., Symposium on

Diabetes, Carnegie Music Hall (two minutes walk from University Club); Friday, October 5, 1923, 9 A. M., Clinic on Diabetes, Mercy Hospital Amphitheatre.

Remember that the State Convention this year is not "over" on Thursday afternoon—make your plans accordingly.

The literature on diabetes and insulin is voluminous; it would require several weeks' reading to cover it—save time and get a wider knowledge on this live subject by attending the Symposium and Clinic.

THE WESTERN PENNSYLVANIA HOSPITAL

CELEBRATION OF THE SEVENTY-FIFTH ANNIVERSARY OF ITS FOUNDATION, FRIDAY, OCTOBER 5, 1923

Program

Clinics .... 8:30 A.M. to 12 M.
*Luncheon ....12:00 P.M. to 1 P.M.
Address by Dr. John B. Deaver ....
.... 1:00 P.M. to 2:00 P.M.
Dry Clinic on the "Thyroid" 2:00 P.M. to 4:00 P.M.
*Afternoon Tea served.

HISTORICAL REVIEW

The Western Pennsylvania Hospital was created by an act of the Pennsylvania Legislature, March 18, 1848.

The first official meeting of the Contributors took place April 18, 1848, when the following officers were elected: President, Thos. Bakewell; vice-presidents, George Breed and John Graham; secretary and treasurer, John Harper.

Capt. and Mrs. Schenley and Mr. and Mrs. Harmar Denny having donated a large tract of ground at 28th St. fronting the Pennsylvania Railroad, The Western Pennsylvania Hospital was erected thereon for the care of one hundred medical and surgical and twenty insane patients. The needs of the insane of this district were so great, however, that it soon became necessary to erect a separate hospital for their care at Dixmont (1862). Both institutions remained under the same management until 1907 when separate charters were granted by the Legislature, our institution retaining the name of The Western Pennsylvania Hospital and the Insane Department taking that of Dixmont, by which it had been generally known.

The Western Pennsylvania Hospital was opened for the admission of patients, January, 1853, with the following Staff:

Consultonts: Dr. Addison, Dr. Gazzam, Dr. Edrington, Dr. Wm. F. Irwin; *Physicians:* Dr. James King, Dr. Jos. A. Reed, Dr. Geo. D. Bruce, Dr. John Wilson; *Surgeons:* Dr. J. H. Willson, Dr. R. B. Mowry, Dr. M. R. Trevor, Dr. L. Schenck.

The needs of the Government were so pressing during the Civil War that in 1862, after the opening of the Insane Department at Dixmont, the Medical and Surgical Department of The Western Pennsylvania Hospital, as it was then known, was placed at the disposal of the Government for the care of soldiers and not returned to the hospital management until October 3, 1865. It is really from this latter date that the important activities of the hospital began.

From 1865 to 1870 Dr. C. B. King acted as curator and physician. During 1870 he resigned as curator, remaining, however, in charge of the Medical Department, to which were added Drs. LeMoyne, McCann and Benham.

In 1873 the Staff was as follows:

Surgeons: Dr. C. B. King, Dr. F. LeMoyne, Dr. Jas. McCann, Dr. J. B. Murdoch; *Physicians:* Dr. W. H. Daly, Dr. W. Snively, Dr. T. C. Rhodes, Dr. W. J. Asdale.

An interne service was not established until 1874. The first Interne was W. B. Mowry, of Allegheny City (N. S. Pittsburgh) who together with two medical students constituted the interne staff.

The Western Pennsylvania Staff: Drs. James McCann, James B. Murdoch, Cyrus B. King, surgeons; and Drs. Wm. J. Asdale, J. Chris Lange, and W. Snively, physicians, recognizing the fact that the amount of hospital clinical material furnished ample facilities for student and teaching requirements, conceived the idea of founding a medical school in connection with the Western Pennsylvania Hospital. In 1886 the Western Pennsylvania Medical College was organized. The Medical School building was erected on Brereton Avenue, on a site adjoining the grounds of the Western Pennsylvania and an operating pavilion was added to the hospital in which the medical and surgical clinics of the college were held.

On September 1, 1892, a Nurses' Training School was established. Miss Mary McMillan of New York was the first superintendent of the school.

November 3, 1909, the cornerstone of the present hospital building on Friendship Avenue was laid, and on May 12, 1912, all patients were transferred from the old hospital to the new building.

The present Western Pennsylvania Hospital consists of the hospital proper, the power building, and the nurses' dormitory. It's capacity is 475 beds. Its present medical staffs comprise: A consulting staff of 6 members, a medical staff of 6 chiefs and 8 assistants, a surgical staff of 12 chiefs and 15 assistants, a dispensary staff of 25 members, and an interne staff of 23 members.

The new nurses' dormitory with its 226 individual bed rooms has just been completed and dedicatory exercises are planned as a part of the hospital's anniversary. The present Training School is composed of sixteen officers and head nurses and of 158 pupil nurses.

NOTICES

There will be a subscription dinner on Thursday, October 4th, at 6:00 P. M., in honor of Dr. Banting of Toronto. This dinner will be given at the new University Club. Tables or seats may be reserved in advance by sending request with check ($5.00 per plate) to Dr. C. B. Maits, 6692 Kinsman Road, Pittsburgh, Pa.

On Thursday, October 4th, at 8:00 P. M., in the Carnegie Music Hall, Dr. Banting will deliver a lecture on diabetes, with special reference to the development of insulin. This lecture will be not only for our own members but for the public, so that all those interested in diabetes will be welcome. The accoustics of the Music Hall are so perfect that any seat is a good seat. Reserved seat tickets, however, will be furnished for the asking at the registration booth during the session.

Any of our members who desire to play golf will be furnished with guest cards, on request, for any of the Pittsburgh country clubs.

AUTOMOBILE ROUTES TO PITTSBURGH

Route No. 1

PHILADELPHIA TO PITTSBURGH THE LINCOLN HIGHWAY

.0 Philadelphia
33.0 Downingtown

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* Under Management of the Ladies of the Social Service Committee.

39.0	Coatesville
65.5	Lancaster
76.5	Columbia
89.5	York
117.5	Gettysburg
143.3	Chambersburg
165.0	McConnellsburg
199.0	Bedford
235.5	Jennertown
247.0	Ligonier
266.0	Greensburg
275.5	Irwin
283.0	East McKeesport
285.5	East Pittsburgh

Turn right and follow Ardmore Boulevard (Speed Trap) bearing left on Penn Ave. through

290.0	Wilkinsburg
291.5	Point Breeze

For Hotel Schenley turn left on Fifth Ave.; for downtown hotels continue direct on Penn Ave. through

292.5	East Liberty
292.6	Turn left on Beatty St. and bear right on Baum Blvd. (Automobile Club of Pittsburgh on left)
294.2	At end turn right on Craig St. to Bigelow Blvd.
297.3	PITTSBURGH.

All improved and in fair condition.

August—Detour of about 7 mi. east of Gettysburg; Detour bridge out Harrisonville, west of McConnellsburg; Detour 1½ mi. Youngstown (10 mi. east of Greensburg).

Route No. II

WILLIAMSPORT TO PITTSBURGH

.0		WILLIAMSPORT
15.5		Jersey Shore
28.0		Lock Haven
66.5		Bellefonte
79.5		State College
105.5		Water Street
128.0		Hollidaysburg
140.5		Cresson
151.5		Ebensburg
158.5	Turn left	Mundys Corners
169.5		Johnstown
188.0	Turn right on Lincoln Highway,	Jennertown
199.5		Ligonier

From here, follow Route No. 1, to Pittsburgh, 250.0 miles.

All improved and in good condition.

August Detours—Rough, entering Johnstown; 1½ mi. at Youngstown (10 mi. east of Greensburg).

Route No. III

EASTON TO PITTSBURGH

.0		EASTON
16.0		Allentown
51.0		Reading
78.0		Lebanon
102.5		Harrisburg
123.2		Carlisle
152.8		Chambersburg
	Turn left at	Square on Lincoln Highway
174.5		McConnellsburg
208.5		Bedford
245.0		Jennertown
256.5		Ligonier

From here, follow Route No. I, to Pittsburgh, 306.3 miles

All improved and in good condition.

August Detours—2 between Reading and Harrisburg; Harrisonville, bridge west of McConnellsburg; Youngstown, 1½ mi. (10 mi. east of Greensburg).

Route No. IV.

SCRANTON TO PITTSBURGH

.0		SCRANTON
18.0		Wilkes Barre
58.5		Bloomsburg
68.0		Danville
79.2		Northumberland
86.5	Turn right	Selinsgrove
97.5		Middleburg
130.5		Lewistown
136.7		Reedsville
162.2	Turn right	(Speed Trap) Mill Creek
168.2		Huntingdon
178.2		Water Street
200.8		Hollidaysburg
213.0		Cresson
224.0		Ebensburg
231.0	Turn left	Mundys Corners
242.2		Johnstown
260.7		Jennertown
272.2		Ligonier

From here, follow Route No. I, to Pittsburgh, 322.3 miles.

About 50 mi. of clay between Wilkes Barre and Lewistown, usually very good condition. Balance improved.

August—Rough entering Johnstown.

Alternate Route between Selinsgrove and Lewistown, continue down river (detour of about 13 mi. between Selinsgrove and McKees Half Falls via Mt. Pleasant Mills) to Liverpool, thence via Millerstown to Lewistown. 20 miles longer than above route.

Route No. V

ERIE TO PITTSBURGH

.0	ERIE
15.3	Waterford
26.0	Cambridge Springs
40.3	Meadville
51.3	Cochranton
67.3	Franklin
88.8	Harrisville
95.0	Slippery Rock
112.0	Butler
128.7	Bakerstown
141.0	Etna

Bear left on Bridge St. then left on Main St. through

143.3	Sharpsburg.

Turn right, cross bridge over Allegheny River, turn left, cross bridge and turn right into Highland Park. Turn right and at top of grade sharp right to Park entrance, N. Highland Avenue to Penn Avenue.

146.0	East Liberty

(For Hotel Schenley continue direct on S. Highland Ave. to end, and turn right on Fifth Avenue.)

146.1	Turn right on Baum Boulevard, pass Automobile Club of Pittsburgh on left
147.7	At end turn right on Craig St. to Bigelow Boulevard
150.8	PITTSBURGH

All improved; condition good.

Detour—1,200 ft. between Cambridge Springs and Meadville; 800 ft. at Wyattsville between Cochranton and Franklin.

PROGRAM
EIGHTEENTH ANNUAL CONFERENCE OF SECRETARIES

Tuesday, October 2, at 5 p. m
at the Hotel Henry

Chairman—**John E. Livingood**, Secretary, Berks County Medical Society.

THE KEEPING OF THE COUNTY ROSTER OF PHYSICIANS, MEMBERS AND NONMEMBERS BY THE SECRETARY OF THE COUNTY MEDICAL SOCIETY

William H. Mayer, Secretary, Allegheny County Medical Society.

Discussion opened by Walter S. Brenholtz, Secretary, Lycoming County Medical Society.

INFLUENCING MEDICAL LEGISLATION BY CONFERENCE, BY COMPONENT SOCIETIES OR BY INDIVIDUAL MEMBERS

Ira G. Shoemaker, Trustee and Councilor, Third District.

Discussion opened by President Lawrence Litchfield.

IS THE PROSECUTION OF ILLEGAL PRACTITIONERS BY THE COUNTY MEDICAL SOCIETY WORTH WHILE?

Anthony F. Myers, Secretary, Bucks County Medical Society.

Discussion opened by M. Edith MacBride, Secretary, Mercer County Medical Society.

SHOULD THE MEDICAL LEGISLATIVE CONFERENCE BE SUPPORTED BY VOLUNTARY CONTRIBUTIONS OR BY AN ANNUAL ASSESSMENT OF $2.00 PER MEMBER?

John E. Livingood, Secretary, Berks County Medical Society.

Discussion opened by President-Elect Howard C. Frontz.

AFFILIATE MEMBERSHIP IN COUNTY, STATE AND NATIONAL MEDICAL SOCIETIES

Secretary **Walter F. Donaldson**.

Dinner at 6:45 P. M. Component Society Secretaries, officers of the State Society and members of the Board of Trustees, $1.00 per plate. Other members of the State Society will be welcome at $2.50 per plate.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. Isaac Francis Stover, of Philadelphia, aged 63 years, died on July 12th following a long illness. Dr. Stover was graduated from Jefferson Medical College of Philadelphia in 1893.

Dr. George Alfred Barrall, of Allentown, who was born in 1857 and was graduated from Jefferson Medical College of Philadelphia in 1882, died on August 18th following an illness of about six months.

Dr. Benjamin Aloysius Del Marco, of Philadelphia, aged 28 years, was shot and killed on July 13th by a demented patient. Dr. Del Marco was a graduate of Jefferson Medical College of Philadelphia, class of 1921.

Dr. George A. Kerling, of Pennsburg, dropped dead on the afternoon of August 17th while watching electricians wire his country home. Death was due to apoplexy. Dr. Kerling was born in 1863, and was graduated from Jefferson Medical College of Philadelphia in 1887.

Dr. William Conrad Kessler, of Philadelphia, who was graduated from Jefferson Medical College of Philadelphia in 1913, died of appendicitis on July 13th, at the age of 35 years. Dr. Kessler was a member of the American Urological Association and served in the medical corps of the U. S. Army during the World War.

Mrs. Margaret Ellenberger died August 24th, at the home of Dr. C. R. Phillips, Harrisburg, aged 83 years. She is survived by two sons, Dr. J. Wesley Ellenberger, and C. A. Ellenberger, and one daughter, Mrs. C. R. Phillips, all of Harrisburg, and a number of grandchildren and great grandchildren. Mrs. Ellenberger was prominent in the work of the Methodist Church and in the work of the Women's Christian Temperance Union in Harrisburg, and throughout her life took an active interest in the charitable work of the city.

ITEMS

Drs. Paul G. Weston and Adelaide Ellsworth, both members of the Warren County Medical Society, were married in July and are now on an extended trip through Europe.

Dr. H. B. Roop, of Columbia, has returned from Pittsburgh where he took a postgraduate course on Internal Medicine at the Postgraduate School of Medicine of the University of Pittsburgh.

Dr. J. Blair Spencer, assistant director of the Department of Public Welfare, of the city of Philadelphia, was recently appointed to succeed the late Dr. C. Lincoln Furbush as director of the Department of Public Health of that city.

The 1923 list of members of the Medical Society of the State of Pennsylvania has been published in pamphlet form. Any member desiring a copy may obtain the same upon request to The Medical Society of the State of Pennsylvania, 230 State St., Harrisburg, Pa.

It has been announced that Dr. Maude E. Abbott, curator of the Medical Museum and lecturer in pathology at McGill University, Montreal, Canada, pioneer woman physician and author, will become a member of the faculty of the Woman's Medical College of Pennsylvania. She has accepted the chair of pathology and bacteriology with supervision of the clinical laboratory.

Announcement has been made of the marriage of Dr. Benjamin Franklin Royer, formerly of the State Health Department of Pennsylvania, to Miss Jessie Leona Ross. The ceremony was solemnized on July 19th at the American Consulate General in Halifax, Nova Scotia. Dr. Royer is engaged in health work for the government of the Dominion of Canada, with headquarters at Halifax, N. S.

GENERAL NEWS ITEMS

Mr. Homer N. Calver has been elected acting Executive Secretary of the American Public Health Association to fill the vacancy caused by the resignation of Mr. A. W. Hedrich. Mr. Calver is a graduate in sanitary engineering of the Massachusetts Institute of Technology and has had experience in health work in South Carolina, in France during the war, and in New York City.

Among the forthcoming important meetings of special societies is the annual convention of The American Roentgen Ray Society. This is to be held in Chicago with headquarters at the Congress Hotel, the time of the meeting being from September 18th to 21st. A number of eminent foreign contributors will appear on the program, and the announcements indicate that treatment by high voltage x-ray will have a prominent place on the program.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination for Junior Medical Officer:

Applications will be received until December 28th. The examination is to fill vacancies in the Indian service, at entrance salaries ranging from $1,000 to $1,200 a year, plus the increase of $20 a month granted by Congress, and quarters, heat, and light; in the Coast and Geodetic Survey, at an entrance salary of $1,020 a year, plus the increase of $20 a month, and an allowance of $1 a day for subsistence while serving on board ship, except in the Philippines, where the allowance is $2.50 a day; and, in the Panama Canal Service, at an entrance salary of $250 a month.

Applicants must have been graduated from a medical school of recognized standing; or be senior students in such institution and furnish proof of graduation within six months from the date of making oath to the application.

Competitors will not be required to report for examination, but will be rated on their education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil-service examiners at the post office or customhouse in any city.

SCHOLARSHIPS IN CHILD HEALTH

The American Child Health Association has appropriated $10,000 for resident and travel scholarships to physicians. These scholarships are for the purpose of affording an opportunity to secure training in child health work which will better fit them to fill positions with state and municipal divisions of child health or organizations engaged in child health work, or to enable physicians already engaged in the child hygiene field to secure additional training or experience. The fund will be allotted in amounts suited to the objectives arranged for the respective students.

Applicants eligible for these will be physicians who are in good standing in their local and state medical societies, and who shall present evidence of the following qualifications: (a) Graduation from a Grade A medical school and a license to practice in the state from which they apply. (b) Real interest in child health. (c) Either special instruction or practical experience in public health or child hygiene, including school health work. Those who have had such experience will be given preference in the selection of candidates.

The scholarships will be available during the school year of 1923-24 and during the summer of 1924. Awards are to be made soon. Freedom of choice of institutions with approved courses will be permitted.

Application blanks and further information will be furnished on request to the American Child Health Association, 370 Seventh Avenue, New York City..

MEDICAL WOMEN'S NATIONAL ASSOCIATION

The ninth annual meeting of the Medical Women's National Association was held in San Francisco, June 25th and 26th, in conjunction with the American Medical Association meetings, Dr. Grace N. Kimball, president; Dr. Kate Campbell Mead, president-elect. At the open session, Monday evening, Dr. Ray Lyman Wilbur, president-elect, A. M. A., delivered an eloquent and inspiring address on the "Power of the Minority."

At the open session, Tuesday morning, a Five-Year Program was presented by the Executive Committee and Council, and was adopted. This program is under five heads:

1. Continuation of the work of the Committee on Medical Service, American Women's Hospitals; Dr. Esther P. Lovejoy, Chairman, 637 Madison Ave., New York.

2. Federation of Medical Women's Organizations with the Medical Women's National Association, under Organization Committee; Gertrude A. Walker, Chairman, Whitefield, N. H.

3. Public Health, coöperating with A. M. A. Council on Health and Public Instruction, Hygiene, and Women's Foundation for Health, etc.; Dr. Elizabeth B. Thelberg, Chairman, Vassar College. Poughkeepsie, N. Y.

4. Committee for Medical Opportunities for Women, Dr. Sue Radcliff, Chairman, 21 Morris St., Yonkers, N. Y. Internships for young Graduate Members of the M. W. N. A., in hospitals conducted by the American Women's Hospitals; in Missionary Hospitals and in Hospitals in U. S. A., as well as opportunities for private practice, service on boards of health, government appointments, etc.

5. Publicity for the Medical Women's National Association through the Bulletin and an editorial staff, consisting of the President and Executive Committee, President-Elect and an Editor-in-Chief. Dr. Grace N. Kimball, Poughkeepsie, N. Y., was appointed Editor-in-Chief.

The *Bulletin*, which was published quarterly last year, will be continued as the official organ of the Association and sent to all members of the M. W. N. A.

An amendment to the constitution was passed, providing for group membership. This was in response to proposals for federation made last year by certain state societies of medical women.

Under the group membership amendment, organizations of women whose basis of membership conforms to that of the M. W. N. A., viz., membership in the A. M. A., may join the National as group members: Kansas State Medical Women's Society, New York State Medical Women's Society, Connecticut State Medical Women's Society, and Portland, Ore., State Medical Women's Club affiliated through their representatives at the San Francisco meeting. The Nebraska, Los Angeles and New England Medical Women's Societies signified their desire to take action regarding affiliation.

The M. W. N. A. had a most interesting exhibit, booth E of the A. M. A. Scientific and Educational Exhibits showing the work of the American Women's Hospitals in Greece and Serbia. Twenty hospitals and a large number of dispensaries are being run by this Committee of the M. W. N. A. in Greece alone, under the directorship of Dr. Mabel Elliott, New York Headquarters, 637 Madison Ave., New York; Dr. Esther P. Lovejoy, Executive Secretary.

Four periods in the A. M. A. moving picture theater were assigned to the National—a film of work in Greece, Crete and the quarantine work on Macronessi Islands, shown by Esther Lovejoy; and slides of hospital and surgical work in Serbia under Dr. Etta Gray.

Dr. Kate Campbell Mead, of Middletown, Conn., was installed as president. Dr. Katherine C. Manion, of Port Huron, Mich., was chosen president-elect.

The following officers and councilors were elected: First vice-president, Dr. Martha Welpton, San Diego; second vice-president, Dr. Marjory J. Potter, San Diego; third vice-president, Dr. Florence W. Duckering, Boston, Mass; secretary, Dr. Jessie W. Fisher, Middletown, Conn.; treasurer, Dr. Rosa H. Gantt, Spartanburg, S. C.

The 1924 annual meeting of the Medical Women's National Association will be held in Chicago, Ill.

Dr. O. Pine queries: Why so much uproar about the cancer mortality, the pneumonia mortality, and the tuberculosis mortality? Is not the automobile mortality rapidly diminishing all other mortality statistics?

Dr. O. Pine queries: Does "daylight saving" economize "twilight sleep"?

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 **Incorporated, December 20, 1890**

CALL TO 1923 SESSION

The object of this notice is to inform the members of the 1923 House of Delegates that in addition to the usual business incidental to the annual session, an amendment to the Constitution will be brought up for consideration and action.

COMMITTEES OF THE HOUSE OF DELEGATES

COMMITTEE ON CREDENTIALS

M. Edith MacBride, Chairman, Sharon.
Marsden D. Campbell, Loganton.
Carlisle N. Haines, Sayre.

REFERENCE COMMITTEE ON REPORTS OF OFFICERS AND STANDING COMMITTEES

J. Newton Hunsberger, Chairman, Norristown.
Alexander Armstrong, White Haven.
Edward J. G. Beardsley, Philadelphia.

REFERENCE COMMITTEE ON SCIENTIFIC BUSINESS

Charles B. Maits, Chairman, Pittsburgh.
Frederick A. Fetherolf, Allentown.
Michael V. Ball, Warren.

REFERENCE COMMITTEE ON NEW BUSINESS

Samuel P. Mengel, Chairman, Wilkes-Barre.
Moses Behrend, Philadelphia.
George H. Robinson, Uniontown.

COMMITTEE ON PLACE OF MEETING

Frank G. Hartman, Chairman, Lancaster.
Edward E. Mayer, Pittsburgh.
Clarence R. Phillips, Harrisburg.

MEMBERS OF THE HOUSE OF DELEGATES*

ADAMS COUNTY

- Harry E. Gettier, Littlestown, Pres.
  - J. Percival Dalbey, Gettysburg, Secy.
- J. Lawrence Sheetz, New Oxford.
  - Albert Woomer, Cashtown.
  - Tempest C. Miller, Abbottstown.

ALLEGHENY COUNTY (PITTSBURGH)

- Ernest W. Willetts, Diamond Bank Bldg., Pres.
  - William H. Mayer, Jenkins Arcade, Secy.
- Richard J. Behan, Jenkins Arcade.
  - I. Hope Alexander, Jenkins Bldg.
  - Frederic T. Billings, Union Arcade.
- Charles B. Maits, 6692 Kinsman Road.
  - Richard E. Brenneman, Jenkins Arcade.
  - George S. Bubb, 146 Greydon Ave., McKees Rocks.
- Edward E. Mayer, Jenkins Arcade.
  - L. Van Leer Brown, Castle Shannon.
  - Richard G. Burns, 3930 Perrysville Ave.
- Harold A. Miller, Jenkins Bldg.
  - Thomas B. Carroll, Jenkins Arcade.
  - Alexander H. Colwell, Highland Bldg.
- John M. Thorne, Jenkins Arcade.
  - Clyde L. Curll, 99 Hazlewood Ave.
  - Bender Z. Cashman, Westinghouse Bldg.
- Carey J. Vaux, City-County Bldg.
  - Luba R. Goldsmith, 5802 Beacon St.
  - Lester Hollander, Jenkins Arcade.
- Joseph E. Willetts, Jenkins Arcade.
  - J. Donald Iams, Jenkins Arcade.
  - John A. Lichty, 5th Ave. and Neville St.
- Joseph M. Douthett, East End Trust Bldg.
  - A. Alexander MacLachlan, May Bldg.
  - C. Bradford McAboy, East End Trust Bldg.
- Edward B. Heckel, Jenkins Bldg.
  - Evan W. Meredith, Jenkins Arcade.
  - Franklin B. Miller, Fulton Bldg.
- James I. Johnston, 4715 Fifth Ave.
  - Henry T. Price, Westinghouse Bldg.
  - Frank H. Rimer, Municipal Hospital.
- George W. McNeil, Liberty Bldg.
  - DeWayne Richey, Mercy Hospital.
  - Ralph V. Robinson, Jenkins Arcade.
- John W. Worrell, 110 S. Fairmount Ave.
  - Wilton H. Robinson, Jenkins Arcade.
  - John D. V. Singley, 812 N. Highland Ave.
- William H. Mayer, Jenkins Arcade.
  - Frederick B. Utley, Highland Bldg.

ARMSTRONG COUNTY

- Charles H. Furnee, Kittanning, Pres.
  - Jay B. F. Wyant, Kittanning, Secy.
- William J. Bierer, Kittanning.
  - Hugh I. Stitt, Kittanning.
  - Edward H. McClister, Kittanning.

BEAVER COUNTY

- John B. Ague, Beaver Falls, Pres.
  - Boyd B. Snodgrass, Rochester, Secy.
- Jefferson H. Wilson, Beaver.
  - Robert M. Patterson, Beaver Falls.

BEDFORD COUNTY

- Walter F. Enfield, Bedford, Pres.
  - Norman A. Timmins. Bedford, Secy.
- Maurice V. Brant, Cairnbrook.
  - Harry I. Shoenthal, New Paris.
  - Wilmot Ayers, Bedford.

BERKS COUNTY (READING)

- David S. Grim, 232 N. Sixth St., Pres.
  - John E. Livingood, 249 N. Fifth St., Secy.
- Frank P. Lytle, Birdsboro.
  - Leroy W. Frederick, 418 N. Tenth St.
  - Abner W. Banscher, 336 N. Fifth St.
- H. Philemon Brunner, 122 Oley St.
  - Ira G. Shoemaker, 19 S. Ninth St.
  - Winfield H. Ammarell, Birdsboro.

BLAIR COUNTY (ALTOONA)

- Logan E. Hull, 1219 Thirteenth Ave., Pres.
  - Charles F. McBurney, 604 Ninth St., Secy.
- W. Albert Nason, Roaring Springs.
  - John H. Galbraith, 1123 Thirteenth Ave.
  - James S. Taylor, 1107 Thirteenth Ave.

BRADFORD COUNTY

- Grant H. Gustin, Sylvania, Pres.
  - Stanley D. Conklin, Sayre, Secy.
- Carlyle N. Haines, Sayre.
  - Howard C. Down, Towanda.
  - Stanley D. Conklin, Sayre.

BUCKS COUNTY

- John A. Weierbach, Quakertown, Pres.
  - Anthony F. Myers, Blooming Glen, Secy.

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* The offset names are the alternates and where street address only is given, the name of the city follows the name of the county.

George S. Deibert, Sellersville.
Arthur Wareham, Morrisville.
Roscoe C. Magill, Newhope.

BUTLER COUNTY (BUTLER)

Willis A. McCall, 205 S. Main St., Pres.
L. Leo Doane, Reiber Bldg., Secy.
M. Edward Headland, 216 Center Ave.
William J. Grossman, 312 W. Jefferson St.
Clarence E. Imbrie, 327 N. Main St.

CAMBRIA COUNTY (JOHNSTOWN)

John L. Sagerson, 431 Lincoln St., Pres.
Joseph J. Meyer, 425 Lincoln St., Secy.
James A. Lynch, Cresson.
Benjamin T. Bowers, St. Benedict.
Robert J. Sagerson, 340 Lincoln St.
John W. Barr, Swank Bldg.
Sylvester S. Kring, Johnstown Trust Bldg.
William J. Murray, 225 Market St.

CARBON COUNTY

Roger P. Batchelor, Palmerton, Pres.
Jacob A. Trexler, Lehighton, Secy.
Alexander Armstrong, White Haven.
Wilson P. Long, Weatherly.
Joseph J. Bellas, Lansford.

CENTER COUNTY

Harvey S. Braucht, Spring Mills, Pres.
Oscar W. McEntire, Howard, Secy.
James L. Seibert, Bellefonte.
Peter H. Dale, State College.
Oscar W. McEntire, Howard.

CHESTER COUNTY

Henry Pleasants, Jr., West Chester, Pres.
Joseph Scattergood, West Chester, Secy.
Thomas G. Aiken, Berwyn.
Joseph Hemphill, Jr., West Chester.
W. W. Woodward, West Chester.

CLARION COUNTY

Charles A. Fitzgerald, Clarion, Pres.
Charles C. Ross, Clarion, Secy.
John B. Miller, Sligo.
Albert J. Hepler, New Bethlehem.
John N. Camp, Foxburg.

CLEARFIELD COUNTY (CLEARFIELD)

Michael C. Dinger, Morrisdale, Pres.
John M. Quigley, 922 Dorey St., Secy.
John C. Sullivan, DuBois.
William S. Piper, 210 N. Second St.
Ward O. Wilson, 210 N. Second St.

CLINTON COUNTY

William J. Shoemaker, Lock Haven, Pres.
Robert B. Watson, Lock Haven, Secy.
Marsden D. Campbell, Loganton.
Saylor J. McGhee, 214 W. Main St., Lock Haven.
David W. Thomas, Lock Haven.

COLUMBIA COUNTY

Ralph E. Warntz, Nescopeck, Pres.
Charles B. Yost, Bloomsburg, Secy.
James R. Gemmill, Millville.
Willet P. Hughes, Bloomsburg.
Heister V. Hower, Berwick.

CRAWFORD COUNTY

David G. Snodgrass, Meadville, Pres.
Cornelius C. Laffer, Meadville, Secy.
Oliver H. Jackson, Meadville.
Carl M. Hazen, Titusville.
Samuel J. Dickey, Conneautville.

CUMBERLAND COUNTY

Parker W. Wagoner, Carlisle, Pres.
Calvin R. Rickenbaugh, Carlisle, Secy.
Harry A. Spangler, Carlisle.
Henry C. Lawton, Camp Hill.
Parker W. Wagoner, Carlisle.

DAUPHIN COUNTY (HARRISBURG)

Charles M. Rickert, 232 Maclay St., Pres.
Andrew J. Griest, Steelton, Secy.
Clarence R. Phillips, 1646 N. Third St.
W. Stewart Russell, Steelton.
David S. Funk, 300 N. Second St.
Edwin A. Nicodemus, 1437 Derry St.
Herbert F. Gross, 1501 N. Second St.
George L. Laverty, 226 State St.

DELAWARE COUNTY (CHESTER)

J. Clinton Starbuck, Media, Pres.
Walter E. Egbert, 601 E. Thirteenth St., Secy.
C. Irwin Stiteler, Fifth and Welsh Sts.
William B. Evans, Chester.
George H. Cross, 525 Welsh St.

ELK COUNTY

Maurice T. Leary, Ridgway, Pres.
Joseph E. Madara, St. Marys, Secy.
Joseph E. Madara, St. Marys.
Samuel G. Logan, Ridgway.
John C. McAllister, Ridgway.

ERIE COUNTY (ERIE)

Elmer G. Weibel, 215 W. Seventh St., Pres.
Roy S. Minerd, 24 W. Ninth St., Secy.
Fred Fisher, 343 E. Sixth St.
Chester H. McCallum, 219 W. Eighth St.
Anna Schrade, 716 Sassafras St.
Hugh M. Moorhead, 804 Peach St.
J. Elmer O'Brien, 302 E. Tenth St.
E. I. Steinberg, 134 W. Ninth St.

FAYETTE COUNTY

Robert E. Heath, Fairchance, Pres.
Jacob S. Hackney, Uniontown, Secy.
George H. Robinson, Uniontown.
Jesse Hazlett, Vanderbilt.
Charles H. LaClair, Uniontown.
Harry J. Bell, Dawson.
George W. Gallagher, Connellsville.
James E. Van Gilder, Uniontown.

FRANKLIN COUNTY

Fairfax G. Wright, Chambersburg, Pres.
Samuel D. Shull, Chambersburg, Secy.
John W. Croft, Waynesboro.
J. Burns Amberson, Waynesboro.
Frank N. Emmert, Chambersburg.

GREENE COUNTY

Rufus E. Brock, Waynesburg, Pres.
Harry C. Scott, Waynesburg, Secy.
Thomas N. Millikin, Waynesburg.
W. Burdett Clendenning, Jollytown.
Robert W. Norris, Waynesburg.

HUNTINGDON COUNTY

Fred R. Hutchison, Huntingdon, Pres.
John M. Beck, Alexandria, Secy.
Cloyd G. Brumbaugh, 805 Mifflin St., Huntingdon.
George G. Harmon, 523 Penn St., Huntingdon.
Marshall B. Morgan, Sixth and Penn Sts., Huntingdon.

INDIANA COUNTY

Thomas J. McNelis, Homer City, Pres.
James M. Torrence, Indiana, Secy.
Todd R. Boden, McIntyre.
Harry B. Neal, Indiana.
Alexander H. Stewart, Indiana.

JEFFERSON COUNTY

Alverdi J. Simpson, Summerville, Pres.
Charles W. Johnston, DuBois, Secy.
James C. Borland, Falls Creek.
John H. Murray, Punxsutawney.

JUNIATA COUNTY

Benjamin H. Ritter, McCoysville, Pres.
Brady F. Long, Mifflin, Secy.

Joseph S. Brown, Okeson.
Samuel F. Metz, Thompsontown.
Isaac G. Headings, McAllisterville.

LACKAWANNA COUNTY (SCRANTON)

Charles B. Noecker, Connell Building, Pres.
George A. Clark, Connell Building, Secy.
Leonard G. Redding, Scranton Life Bldg.
John J. Sullivan, Jr., Traders Bank Bldg.
Addison W. Smith, Union National Bank Bldg.
Daniel E. Berney, Connell Bldg.
William R. Davies, Traders Bank Bldg.
Irwin W. Severson, 225 Jefferson Ave.
Frederick J. Bishop, 220 Connell Bldg.
John J. Brennan, 230 S. Main Ave.
Joseph C. Reifsnyder, Connell Bldg.

LANCASTER COUNTY (LANCASTER)

Horace C. Kinzer, 128 N. Duke St., Pres.
Charles P. Stahr, 129 E. Walnut St., Secy.
J. Paul Roebuck, 233 N. Duke St.
Byron J. Reemsnyder, Ephrata, R. D. 3.
Harry B. Roop, Columbia.
Frank G. Hartman, 136 N. Duke St.
Jacob E. Hostetter, Gap, R. D. 1.
Frank Alleman, 420 W. Chestnut St.

LAWRENCE COUNTY

Eliah Kaplan, New Castle, Pres.
William A. Womer, New Castle, Secy.
Louis W. Grossman, New Castle.
James M. Blackwood, New Castle.
Benjamin M. Berger, New Castle.

LEBANON COUNTY

Seth A. Light, Lebanon, Pres.
W. Horace Means, Lebanon.
J. DeWitt Kerr, Lebanon.
Franklin B. Witmer, Lebanon.
Walter H. Brubaker, Lebanon.

LEHIGH COUNTY (ALLENTOWN)

Frederick A. Fetherolf, 941 Hamilton St., Pres.
J. Treichler Butz, 1104 Hamilton St., Secy.
Frederick R. Bausch, 109 N. Second St.
David H. Parmet, 436 Tilghman St.
Ralph F. Merkle, 219 N. Seventh St.
Frank S. Boyer, 16 N. Second St.
William A. Hausman, Jr., 1116 Hamilton St.
John Schneller, Catasauqua.

LUZERNE COUNTY (WILKES-BARRE)

N. Louis Schappert, 57 S. Washington St., Pres.
Edward W. Bixby, 61 W. Ross St., Secy.
Samuel P. Mengel, 181 S. Franklin St.
Lewis H. Taylor, 83 S. Franklin St.
Peter P. Mayock, 70 S. Main St.
Charles Long, 33 S. Washington St.
Daniel G. Robinhold, 1170 Wyoming Ave., Forty-fort.
Alfred W. Grover, 256 Maple St., Kingston.
Walter Davis, 24 S. Washington St.
George R. Drake, 135 W. Main St., Plymouth.
Patrick F. McHugh, 211 Parrish St.

LYCOMING COUNTY (WILLIAMSPORT)

J. Louis Mansuy, Ralston, Pres.
Walter S. Brenholtz, 151 E. Third St., Secy.
John A. Campbell, 838 Funston Ave.
Wesley F. Kunkle, 519 Seventh Ave.
G. Alvin Poust, Hughesville.
Joseph W. Albright, Muncy.
Edward Everett, Masten.
J. Frank Gordner, Montgomery.

MCKEAN COUNTY

William A. Ostrander, Smethport, Pres.
Francis DeCaria, Bradford, Secy.
William A. Ostrander, Smethport.
Samuel R. Huff, Eldred.
Lawrence W. Dana, Kane.

MERCER COUNTY

William W. Richardson, Mercer, Pres.
Edith MacBride, Sharon, Secy.
Edith MacBride, Sharon.
William W. Wyant, Farrell.
Clarence W. McElhaney, Greenville.

MIFFLIN COUNTY

Charles M. Johnson, McVeytown, Pres.
James A. C. Clarkson, Lewiston, Secy.
John P. Getter, Belleville.
Henry W. Sweigart, Lewistown.
Frederick A. Rupp, Lewistown.

MONROE COUNTY

John H. Stearns, Delaware Water Gap, Pres.
William R. Levering, Stroudsburg, Secy.
J. Anson Singer, E. Stroudsburg.
Walter L. Angle, E. Stroudsburg.
Eugene H. Levering, Stroudsburg.

MONTGOMERY COUNTY

Willis Read Roberts, Norristown, Pres.
Edgar S. Buyers, Norristown, Secy.
J. Newton Hunsberger, Norristown.
Elmer G. Kreibel, Norristown.
R. Vincent Wolfe, Skippack.
Herbert A. Bostock, Norristown.
Winfred J. Wright, Skippack.
J. Elmer Gotwals, Phœnixville.

MONTOUR COUNTY

Enoch H. Adams, Danville, Pres.
John H. Sandel, Danville, Secy.
J. Allen Jackson, Danville.
Ernest T. Williams, Danville.
Robert S. Patten, Danville.

NORTHAMPTON COUNTY

Paul Correll, Easton, Pres.
Victor S. Messinger, Easton, Secy.
John C. Keller, Wind Gap.
Clinton F. Stofflet, Pen Argyl.
Cardinal C. McCormick, Pen Argyl.
Francis J. Dever, Bethlehem.
Adolph S. Gabor, Bethlehem.
Delbert K. Santee, Bethlehem.

NORTHUMBERLAND COUNTY

Lloyd M. Holt, Sunbury, Pres.
Charles H. Swenk, Sunbury, Secy.
Horatio W. Gass, Sunbury.
George W. Reese, Shamokin.
Henry T. Simmonds, Shamokin.

PERRY COUNTY

Lenus A. Carl, Newport, Pres.
A. Russell Johnston, New Bloomfield, Secy.
Edward E. Moore, New Bloomfield.
Benjamin F. Beale, Duncannon.

PHILADELPHIA COUNTY (PHILADELPHIA)

David Riesman, 1715 Spruce St., Pres.
Henry G. Munson, 4935 Catherine St., Secy.

Term expiring 1923

Thomas R. Currie, 512 W. Lehigh Ave.
R. Powers Wilkinson, 1613 S. Broad St.
Vincent J. Fenerty, 2217 E. Cumberland St.
Arthur C. Morgan, 2018 Chestnut St.
Dudley T. Cooke, 1536 S. Broad St.
Irwin S. Meyerhoff, 1727 N. Sixteenth St.
Edward A. Shumway, 2046 Chestnut St.
Joseph McIver, 4634 Chester Ave.
James F. Donnelly, 1605 N. Fifteenth St.
Edward B. Krumbhaar, Box 4310 Chestnut Hill.
Russell S. Boles, Overbrook and Fifty-third Sts.
E. Quin Thornton, 1331 Pine St.
George Wilson, 5000 Walnut St.
Charles F. Nassau, 1710 Locust St.

Rae S. Dorsett, 213 S. Forty-sixth St.
John A. McGlinn, 113 S. Twentieth St.
John S. Musser, 262 S. Twenty-first St.
Thomas Klein, 1717 Pine St.
Paul B. Cassidy, 2037 Pine St.
Elmer H. Funk, 1318 Spruce St.
P. Brooke Bland, 1621 Spruce St.
T. Turner Thomas, 1905 Chestnut St.
Frederick S. Baldi, 2117 Porter St.
Damon B. Pfeiffer, 2028 Pine St.
William S. Higbee, Belgravia, 1811 Chestnut St.
D. Clinton Guthrie, 722 N. Fortieth St.
William T. Hamilton, 1221 W. Lehigh Ave.
John Welsh Croskey, 3325 Powelton Ave.
L. Napoleon Boston, 2024 Chestnut St.
Samuel A. Carpenter, 2265 N. Sixteenth St.

Term expires 1924

Moses Behrend, 1738 Pine St.
Walter S. Cornell, 729 City Hall.
Mary Buchanan, 2106 Chestnut St.
William N. Bradley, 1725 Pine St.
I. Rendall Strawbridge, 1418 N. Fifteenth St.
James H. Arnett, 2540 N. Eleventh St.
Seth A. Brumm, 818 Stock Exchange Bldg.
Henry F. Page, 315 S. Sixteenth St.
Francis H. Adler, 313 S. Seventeenth St.
Henry Beates, Jr., 260 S. Sixteenth St.
Marian H. Rea, Gulph Rd., Bryn Mawr.
Collin Foulkrod, 3910 Chestnut St.
Charles A. E. Codman, 4116 Spruce St.
Louis Edeiken, 2412 S. Fifth St.
L. Waller Deichler, 2028 Chestnut St.
L. Webster Fox, 303 S. Seventeenth St.
William H. Good, 5309 Rising Sun Lane.
Stanley Q. West, 138 W. Walnut Lane, Gtn.
J. Norman Henry, 1906 Spruce St.
William C. Ely, 3912 Chestnut St.
McCluney Radcliffe, 1906 Chestnut St.
George A. Knowles, 4812 Baltimore Ave.
A. Graeme Mitchell, 1725 Pine St.
John H. Remig, 805 S. Twelfth St.
Edward J. G. Beardsley, 258 S. Sixteenth St.
Russell S. Boles, Overbrook and Fifty-third Sts.
Joseph C. Doane, Philadelphia General Hospital.
John W. West, 1125 Wallace St.
G. Mason Astley, 5317 Master St.
Ralph E. Getelman, 2011 Chestnut St.
George C. Yeager, 1419 E. Susquehanna Ave.
Irving W. Hollingshead, 123 S. Eighteenth St.
John A. Kolmer, Cynwyd.

POTTER COUNTY

Michael R. Long, Galeton, Pres.
Ross H. Jones, Coudersport, Secy.
Nathan W. Church, Ulysess.
A. Jackson Colcord, Port Allegany.

SCHUYLKILL COUNTY

Merchant C. Householder, Pottsville, Pres.
Arthur B. Fleming, Tamaqua, Secy.
J. Spencer Callen, Shenandoah.
T. Lamar Williams, Mt. Carmel.
David Taggert, Frackville.
George R. S. Corson, Pottsville.
George O. O. Santee, Cressona.
George H. Moore, Schuylkill Haven.

SNYDER COUNTY

Russell W. Johnston, Selins Grove, Pres.
John O. Wagner, Beaver Springs, Secy.
Edward W. Toole, Selins Grove.
Percy E. Whiffen, McClure.
Milton E. Wagner, McClure.

SOMERSET COUNTY

William P. Shaw, Berlin, Pres.
H. Clay McKinley, Meyersdale, Secy.
Frank Sass, Boswell.
Bruce Lichty, Meyersdale.

SULLIVAN COUNTY

George C. Swope, Mildred, Pres.
Philip G. Biddle, Dushore, Secy.
Justin L. Christian, Lopez.
George C. Swope, Mildred.

SUSQUEHANNA COUNTY

Dever J. Peck, Susquehanna, Pres.
Edward R. Gardner, Montrose, Secy.
Edward R. Gardner, Montrose.
Dever J. Peck, Susquehanna.
Horace D. Washburn, Susquehanna.

TIOGA COUNTY

Fay X. Field, Wellsboro, Pres.
Solomon P. Hakes, Tioga, Secy.
Lloyd G. Cole, Blossburg.
John H. Doane, Mansfield.
Farnham H. Shaw, Wellsboro.

UNION COUNTY

Amos V. Persing, Allenwood, Pres.
Charles A. Gundy, Lewisburg, Secy.
Ralph Steans, Lewisburg.
Oliver W. H. Glover, Laurelton.
Charles H. Dimm, Mifflinburg.

VENANGO COUNTY

M. Ada McKee, Oil City, Pres.
John F. Davis, Oil City, Secy.
Charles Brown, Franklin.
Paul R. Cunningham, Franklin.
Mayo Robb, Seneca.

WARREN COUNTY

Ralph Knapp, Youngsville, Pres.
Elizabeth S. Beaty, 100 East St., Warren, Secy.
Michael V. Ball, Warren.
Irving G. Hyer, Clarendon.
Robert B. Mervine, Sheffield.

WASHINGTON COUNTY

Alexander N. Booth, Bentleyville, Pres.
Charles C. Cracraft, Claysville, Secy.
William Douglas Martin, Dunn's Station.
Homer P. Prowitt, Washington.
A. LaGrand Runion, Canonsburg.
Leonard C. Honesty, Washington.

WAYNE COUNTY

William T. McConvill, Honesdale, Pres.
Hugh Stevenson, III, Waymart, Secy.
Arthur J. Simons, Newfoundland.
Edward O. Bang, S. Canaan.
Allen A. Berlin, Newfoundland.

WESTMORELAND COUNTY

Thomas St. Clair, Latrobe, Pres.
Myers W. Horner, Mount Pleasant, Secy.
L. Raymond Smith, Jeannette.
John S. Anderson, Greensburg.
Martin E. Griffith, Monessen.
Ellsmer L. Piper, Export.
Urban H. Reidt, Jeannette.
Lee Monte Sankey, Jeannette.

WYOMING COUNTY.

Van C. Decker, Nicholson, Pres.
Herbert L. McKown, Tunkhannock, Secy.
William W. Lazarus, Tunkhannock.
T. Oliver Williams, Tunkhannock.

YORK COUNTY (YORK)

Charles H. May, 1207 N. George St., Pres.
Maurice C. Wentz, Weiser Bldg., Secy.
James C. May, 1207 N. George St.
John A. Melsheimer, Hanover.
Charles Rea, 107 E. Market St.
George E. Holtzapple, George & Princess Sts.
Samuel J. Pfaltzgraff, 440 W. Market St.
W. Frank Gemmill, 135 E. Market St.

REPORTS OF OFFICERS AND COMMITTEES

REPORT OF THE SECRETARY

To the President and House of Delegates:

Per Capita Receipts, August 17, 1922, to August 17, 1923:		
For 1921 Assessment 1 member	$5 00	
For 1922 Assessment 126 members (including 29 half year members)	557 50	
For 1923 Assessment 7,232 members (including 3 half year members)	36,152 50	$36,715 00
Medical Defense allotment	$5,507 25	
Medical Benevolence allotment	1,101 45	
Endowment Fund	1,200 00	7,808 70
Net from dues available for current yearly expenditures		$28,906 30
Gross receipts from Journal		8,020 78
Gross receipts from 1922 commercial exhibit		3,572 51
Gross rental from Harrisburg property (April 25 to August 31)		995 00
		$41,494 59
Rebated to Philadelphia County Medical Society on account of medical defense		493 75
Total available for current yearly administrative expenditures		$41,000 84
Total current yearly administrative expenditures		$36,824 50

PRINCIPAL ITEMS OF ADMINISTRATIVE EXPENSE

Atlantic Medical Journal	$16,334 09
Executive Secretary's office	10,277 83
Annual session	4,066 36
Secretary's office	3,739 95
Traveling expenses	975 00
Printing and stationery	717 00
Installing new accounting system	600 00

MEMBERSHIP

The total paid membership August 17, 1922, was 7,202; the total paid membership August 17, 1923, was 7,232, with the following component society distribution for 1922 and 1923 respectively: Adams County, 26, 24; Allegheny County, 1,195, 1,231; Armstrong, 58, 55; Beaver, 62, 64; Bedford, 16, 16; Berks, 138, 137; Blair, 82, 87; Bradford, 50, 47; Bucks, 78, 75; Butler, 50, 52; Cambria, 129, 136; Carbon, 29, 28; Center, 28, 26; Chester, 72, 73; Clarion, 31, 31; Clearfield, 66, 66; Clinton, 22, 24; Columbia, 44, 40; Crawford, 53, 50; Cumberland, 41, 36; Dauphin, 153, 156; Delaware, 90, 87; Elk, 25, 24; Erie, 131, 135; Fayette, 115, 118; Franklin, 53, 53; Greene, 28, 28; Huntingdon, 39, 35; Indiana, 60, 63; Jefferson, 53, 53; Juniata, 12, 12; Lackawanna, 194, 232; Lancaster, 128, 128; Lawrence, 57, 56; Lebanon, 37, 38; Lehigh, 109, 110; Luzerne, 224, 234; Lycoming, 113, 112; McKean, 43, 40; Mercer, 74, 71; Mifflin, 25, 26; Monroe, 15, 14; Montgomery, 156, 154; Montour, 23, 24; Northampton, 135, 137; Northumberland, 59, 60; Perry, 15, 14; Philadelphia, 1,970, 1,924; Potter, 15, 15; Schuylkill, 113, 127; Snyder, 11, 10; Somerset, 45, 46; Sullivan, 8, 6; Susquehanna, 17, 18; Tioga, 30, 30; Union, 17, 16; Venango, 54, 56; Warren, 48, 49; Washington, 122, 121; Wayne, 27, 25; Westmoreland, 151, 151; Wyoming, 11, 12; York, 124, 117.

During the year we lost one hundred and eight of our members by death, ten by removal, twenty-two by resignation, one by suspension and one by expulsion.

Eleven societies show no change in membership; twenty-five societies, a gain; and twenty-seven, a loss.

MEDICAL DEFENSE

Applications for defense against suits for alleged malpractice since September 1, 1922, total 11, numbering from Case No. 156 to Case No. 166.

Case No. 156. Application dated September 10, 1922. Alleged error in recommending commitment as insane. Summons served August 24, 1922. Appearance made in court.

Case No. 157. Application dated September 26, 1922. Compound comminuted fracture of lower leg. Summons served September 15, 1922. Alleged faulty treatment. Suit not entered against attending physician until physician entered suit for his fee. Case came to trial. Under instructions from the Court, the Jury returned a verdict in favor of the defendant.

Case No. 158. Application dated September 28, 1922. Alleges neglect in precautions against wife's suicide. Summons served September 26. Appearance made in court.

Case No. 159. Application dated October 5, 1922. Alleges infection of one eye from contact with ether during anesthesia. The attorney for the defendant secured in advance an order from the court for full clinical and laboratory examinations, same to be used should trial judge refuse to admit testimony of physicians who had previously examined and treated the plaintiff, on the ground that such testimony was privileged testimony. Case not yet placed on the docket.

Case No. 160. Application dated October 5, 1922. Defendant was the anesthetist in case described as No. 159.

Case No. 161. Application dated October 30, 1922. Alleges faulty treatment of pelvic abscess which resulted fatally. Summons served October 28. Appearance made in court.

Case No. 162. Application dated February 27, 1923. X-ray burn. Summons served February 20, 1923. No further developments.

Case No. 163. Application dated February 24, 1923. X-ray burn. Summons served February 15, 1923. No further developments.

Case No. 164. Application dated January 11, 1923. Bill of complaint not filed but applicant believes that it will be alleged that an x-ray exposure was responsible for a severe cellulitis. Summons served January 3, 1923. Appearance made in court.

Case No. 165. Application dated May 21, 1923. Alleges failure to recognize and properly treat dislocated shoulder. Summons served May 15, 1923. Appearance made in court.

Case No. 166. Application dated June 16, 1923. Alleges bad result in fracture of femur due to application by defendant of plaster cast without first ascertaining that such fracture had been properly reduced. Summons served June 13, 1923.

The following cases have been closed during the past year:

Case No. 124. Court entered non-suit in default of the appearance of the plaintiff.

Case No. 97. Compulsory non-suit.

Case No. 157. See above.

Case No. 145. Concluded after the following unique history: When this case was placed on the general trial list it was ruled out by the defendant's attorney for arbitration under the Compulsory Arbitration Act. Judgment was rendered by the Arbitrators in favor of the defendant because neither the plaintiff nor his attorney appeared. This judgment was transferred to the Common Pleas. The plaintiff then having failed to enter his appeal within the statutory period of twenty days, his cause of action was at an end.

Case No. 140. Compulsory non-suit granted at the close of the plaintiff's testimony.

Case No. 143. Offer to settle case refused. Effort by plaintiff to accept non-suit opposed by defendant. When case came to court, attorney for plaintiff submitted no evidence beyond presenting the plaintiff. The presiding judge ordered a verdict for the defendant, placing the court costs on the plaintiff.

Case No. 152. Threatened suit has been abandoned.

The Committee of Counsel, supported by action of the Board of Trustees, refused assistance from the Medical Defense Fund to two applicants, in one instance because the member delayed five months after entrance of suit before applying for assistance, and in the other because he was not a member in good standing at the time of the alleged malpractice. The officers of the county medical society in which the latter applicant holds membership were severely criticized because they had accepted a transfer card from another state medical society after having been notified by the officers of this Society that such transfer card was valueless.

We have during the last year actually expended $912.00 in the defense of our members in contrast with $310.00 in 1922; $150.00 in 1921; and $4,209.00 in 1920.

BOARD OF TRUSTEES

Your Board of Trustees held their four regularly scheduled meetings in Harrisburg. When possible, meetings of important standing committees were held on the same date in Harrisburg in order that members of the Board might be present for consultation by members of such committees.

During the past year the Board, after careful consideration, purchased an improved property at 230 State Street, Harrisburg. The purchase price, together with the necessary expense involved in improving and converting the building to suit the purpose of the Society, totals approximately $21,000. The building is a three-story brick of old style and construction, situated on a lot 26x113 feet to a ten-foot private alley, on State Street, six doors from the corner of North Third Street.

Those who are familiar with the surroundings of the Capitol Building in Harrisburg will recognize the location of this property as being particularly advantageous, being on the boulevard leading from the front entrance of the Capitol to the Susquehanna River, six doors from the corner of the street running parallel with the front of the Capitol grounds.

The building provides adequate quarters for the office of the Executive Secretary and permits the subletting of two small apartments. It is apparent from the experience of the Board with this property to date that the Society, after payment of taxes, insurance and current upkeep expenses, may occupy its own office rent free, and have in addition a yearly income on the total investment of at least four per cent.

During the past year, after a great deal of work by its Publication Committee, the Board completed and installed plans for issuing a joint journal with the Delaware State Medical Society. If the hopes of the Board are realized, we may later in this joint journal include the publications and official transactions of the medical societies of other bordering states.

Your Secretary is of the opinion that during the past year the finances of our Society, the publication of our journal and the interim control of all the Board's functions have been faithfully administered by our Board of Trustees. The duties of the individual members of the Board, entailing as they do sacrifice of much time and effort, may at times have interfered to a certain extent with the exercise of the duties of these members as Councilors. However, it is sincerely to be hoped that during the coming year the Councilors will find it possible to fulfil all their obligations to the county societies in their respective districts. There is no other office in our Society the duties of which transcend in importance the visiting functions of the office of Councilor.

PUBLIC HEALTH LEGISLATION

The constructive results of the efforts directed by the Medical Legislative Conference to influence the creation of good public health laws during the 1923 session of the Pennsylvania Legislature were so disappointing that we recommend to the House of Delegates the following definite program to become the immediate and continuous objective of appropriate committees in all component societies in support of our representatives in the Medical Legislative Conference of Pennsylvania:

1. The passage of a "one board" licensing bill regulating the practice of all who treat the sick or injured.

2. Satisfactory modification of the existing Workmen's Compensation Law.

3. Opposition to any proposed laws tending to defeat medical research or the practice of preventive medicine.

EDUCATIONAL PROPAGANDA

Our Committee on Public Relations made a splendid impression by its efforts throughout the state in originating and directing a campaign in behalf of "diphtheria prevention week." The results accomplished in the various counties were of course entirely proportionate to the efforts put forth in coöperation by similar committees in the component county societies. That there is need for continuous campaigning in the interest of preventive medicine and for the spreading to the general public of judicious educational advertising matter by our Committee on Public Relations is obvious to all who recognize the slight conception in the minds of the majority of people regarding the large part played by doctors of medicine in the world's scientific, economic and social progress. Hundreds of members of the Illinois State Medical Society have recently contributed ten dollars each to a fund for the spread of judicious educational propaganda regarding the history of the various systems of treating the sick and injured.

POSTGRADUATE MEDICAL EDUCATION

Coöperation between our Society and the Graduate School of Medicine of the University of Pennsylvania has during the past year resulted in the beginning of extension postgraduate medical courses in Philadelphia, Lackawanna, Bradford and Schuylkill counties. Those of our members having the good fortune to be in attendance upon these courses are enthusiastic and Dean Meeker has high hopes for extending, within the next two years, the scope of the plan to include counties throughout Western Pennsylvania. Dean Meeker has expressed the hope that the plan may be arranged for coöperation with the University of Pittsburgh and Pittsburgh hospitals. He states that the results to date are most encouraging and indicate that continued adequate support by the profession and by the state will insure the final success of this movement which will be of no little value to the whole citizenry.

We have missed, during the last few months, the kindly advice and assistance of former Secretary, Editor and President, Dr. C. L. Stevens, whose death occurred on February 19, 1923. Our Society will benefit for years to come from his influence for the best that is in the organized medical profession of his county, state and nation. Dr. Stevens will be sadly missed during the deliberations of the House of Delegates. We express our deep sorrow for the loss of this wise counselor.

In closing we wish to express our appreciation of the coöperation received from the officers of this Society and its component societies.

Respectfully submitted,

Walter F. Donaldson, *Secretary.*

REPORT OF THE EXECUTIVE SECRETARY

To the Board of Trustees:

At the beginning of this year's session of the Legislature a very perplexing problem was presented to those interested in legislation, in that no leadership was apparent in either the House or the Senate. For the first time in many years no group of men was sufficiently in control to be able to anticipate events and advise in regard to legislation. For this reason considerable anxiety was experienced by those concerned with medical legislation, and the results at the close of the session were evidence that these fears were not groundless.

We had hoped to secure an amendment to the Workmen's Compensation Act of 1915, clarifying the section relating to medical, surgical and hospital service so that no misunderstanding would remain as to how the cost for such services should be distributed. Amendments were carefully drafted, and had it not been for the stupidity and, we would almost think, intended mistakes on the part of the printers, we might have been more successful in their passage. Be that as it may, we were opposed by the self-insurers and certain corporations who appeared towards the end of the session to combat the interests of the medical profession.

We believe that surgeons practicing under the Workmen's Compensation Act must present a more urgent appeal and have a more definite purpose in view if this act is to be amended at the next session of the Legislature. There are several plans which, if put into effect, will bring to the employer a better understanding of the relation between the surgeon, the hospital, the insurance carrier and himself.

Legislation affecting the healing art was sufficiently interesting to stimulate active work in behalf of practitioners of special forms of healing. Our previous reports are sufficiently clear as to the results in this field.

Had not the Code, introduced by the organization and endorsed by the Governor of the state, contained measures affecting the Medical Practice Act, we might have been able to secure consideration of our suggestion for the establishment of one board to examine and license all practitioners of any form of the healing art. During the next two years the profession will have an opportunity to observe the effect of the Code as applied to the healing art, and if it is deemed wise, another attempt can then be made to correct such evils as may exist, by the passage of a one-board bill.

Reports previously published in the Journal deal with the results of all other legislation, and it is, therefore, not necessary to refer to specific legislation at this time. We are, however, impressed with the fact that the time to affect legislation is at the primaries even more than at the election of our legislators. If this opportunity is neglected we cannot hope for any better results than have been secured in the past.

The year 1922-23 has seen many changes for the better in the offices of the Executive Secretary. The Board of Trustees should be congratulated upon their keen foresight in purchasing a home for the transaction of the Society's business in Harrisburg, for the property purchased is considered a bargain by those who understand real estate values. It makes it possible for the offices of the Executive Secretary to have a permanent abode, and guarantees greater security for the future work of the Journal. It also offers the opportunity, should business conditions and the work of the Society warrant, to erect a more modern building.

The time of the Executive Secretary during the past year has been devoted largely to work in the office and in the Legislature. We have not, however, neglected any opportunity for consultation in regard to the organization work in the field.

There is a growing feeling, which has been exemplified in many ways, that the medical practice of the future will be not only curative but also preventive. The work in this field which the Committee on Public Relations has been doing since its organization speaks well for the future of this Committee, especially its work in coöperation with the county societies. A suggestion is offered that during the coming year a special effort be made to interest the members of the county societies in devoting more attention to preventive medicine. This office has assisted during the past year, and will continue to assist in every way possible the work of this committee, as well as to be of any other service to the medical profession of the state.

REPORT ON THE JOURNAL

In April, 1923, the proposed consolidation of the *Pennsylvania Medical Journal* and the *Delaware State Medical Journal,* forming the Atlantic Medical Journal, the official publication of the two state societies, was consummated. This arrangement was approved by the House of Delegates and carried out by the Committee on Publication with the thought that in associating with other states a better and more influential, as well as a more profitable journal could be published. The present association with the state of Delaware is very congenial, and affords us an opportunity to exemplify in the East the plan that has been so successful in the West—the association of several societies in the publication of a common official organ.

This change has offered an opportunity to alter somewhat the make-up of the Journal in a manner which we trust our readers will appreciate. The size of the Journal has not been increased but it is offered to the profession in a somewhat different setting, both externally and internally. It goes without saying that both the Editor and the Committee on Publication are anxious to receive contributions and suggestions as to how the Journal may be improved for the greater benefit of the medical profession of the states of Pennsylvania and Delaware.

Following is a statement showing income from the Journal from August 15, 1922, to August 15, 1923:

Advertising	$7,519.56
Subscriptions	158.00
Authors' payments for cuts	239.73
Sale of single Journals	63.84
Miscellaneous income	39.65
Total	$8,020.78

REPORT ON THE ANNUAL SESSION

At this writing (August 9, 1923) plans for the seventy-third annual session are well under way. The William Penn Hotel, Pittsburgh, has been engaged to house the convention. Quarters have been provided on the 17th floor, with one exception: the Medical Section will meet in the Hawaiian Room, which was not available on previous occasions, but which will afford more commodious quarters than we have been able to offer before. This room is located on the ground floor and can easily be reached by elevator or by stairs from the lobby.

The scientific exhibit will be held on the balcony and upper corridor of the Ball Room, and can be reached by the stairway which leads off near the elevators from the 17th floor.

The commercial exhibit will occupy the corridors, Reception Room and rooms E, F and G on the 17th floor. Eighty-six booths of reasonable size will be erected, and at the present time all but a few of these have been sold. The firms that have reserved space are of the type and variety found at the American Medical Association exhibits, which speaks well for the favor with which these firms look upon the sessions of the Medical Society of the State of Pennsylvania.

Arrangements have been made to hold the usual reception to the President on Wednesday night, followed by the annual ball, at which refreshments will be served, and for which a good orchestra has been engaged.

An excellent program has been prepared by the Committee on Scientific Work and the Allegheny County Society has made arrangements to entertain very delightfully both the visiting members and their ladies.

The management anticipates a successful and well worth while session and bespeaks the coöperation of both officers and members to make it an occasion worth remembering. Respectfully submitted,

Frederick L. Van Sickle,
Executive Secretary.

REPORT OF THE TREASURER

General Receipts

1922	
Sept. 1, to cash, balance on hand	$21,602.77
Sept. 25, to cash received for account of Executive Secretary and Editor	470.69
Oct. 23, to cash received from Dr. F. L. Van Sickle, Executive Secretary	636.96
No. 23, to cash received from Dr. F. L. Van Sickle, Executive Secretary	372.22
Nov. 23, to cash received from Dr W. F. Donaldson, membership dues	277.50
Nov. 23, to cash received from Dr. F. L. Van Sickle, Executive Secretary	486.14
Nov. 27, to cash received from Dr. F. L. Van Sickle, Executive Secretary	3,722.51
Nov. 27, to cash received from Dr. W. F. Donaldson, membership dues	137.50
Nov. 27, to cash received from Dr. W. F. Donalsdon, membership dues	35.00
Dec. 19, to cash received from Dr. F. L. Van Sickle, Executive Secretary	175.73
Dec. 23, to cash received from Dr. W. F. Donaldson, membership dues	380.00
Dec. 23, to cash received from Dr. W. F. Donaldson, membership dues	77.50
Dec. 23, to cash received from Dr. F. L. Van Sickle, Executive Secretary	379.01
1923	
Jan. 4, to cash received from Dr. F. L. Van Sickle, Executive Secretary	645.84
Jan. 4, to cash received from Dr. W. F. Donaldson, membership dues	30.00
Jan. 4, to cash received from Dr. W. F. Donaldson, membership dues	870.00
Jan. 5, to cash transferred from Medical Defense Fund for investment	15,000.00
Jan. 5, to cash transferred from Medical Benevolence Fund	3,500.00
Jan. 5, to cash transferred from Endowment Fund..	1,000.00
Jan. 23, to cash received from Dr. W. F. Donaldson, membership dues	3,505.00
Jan. 23, to cash received from Dr. W. F. Donaldson, membership dues	15.00
Jan. 26, to cash received from Dr. F. L. Van Sickle, Executive Secretary	524.40
Jan. 26, to cash received from Dr. W. F. Donaldson, membership dues	1,765.00
Feb. 9, to cash received from Dr. F. L. Van Sickle, Executive Secretary	244.79
Feb. 10, to cash received from Dr. W. F. Donaldson, membership dues	2,015.00
Feb. 14, to cash received from Dr. W. F. Donaldson, difference between amount drawn from special funds and amount invested	58.58
Mar. 1, to cash received from Dr. F. L. Van Sickle, Executive Secretary	614.49
Mar. 1, to cash received from Dr. W. F. Donaldson, membership dues	8,445.00
Mar. 19, to cash received from Dr. W. F. Donaldson, membership dues	4,530.00
Apr. 4, to cash received from Dr. W. F. Donaldson, membership dues	8,445.00
Apr. 6, to cash received from Dr. F. L. Van Sickle, Executive Secretary	660.91
Apr. 21, to cash received from Dr. W. F. Donaldson, membership dues	4,445.00
May 8, to cash received from Dr. W. F. Donaldson, membership dues	730.00
May 8, to cash received from Dr. F. L. Van Sickle, Executive Secretary	726.34
June 1, to cash received from Dr. W. F. Donaldson, membership dues	290.00
June 1, to cash received from Dr. W. F. Donaldson, membership dues	85.00
June 1, to cash received from Dr. F. L. Van Sickle, Executive Secretary	939.55
June 20, to cash received from Dr. W. F. Donaldson, membership dues	95.00
June 30, to cash received from Dr. W. F. Donaldson, membership dues	420.00
July 14, to cash received from Dr. F. L. Van Sickle, Executive Secretary	973.37
July 18, to cash received from Dr. W. F. Donaldson, membership dues	75.00
July 31, to cash received from Dr. W. F. Donaldson, membership dues	37.50
July 31, to cash received from Dr. F. L. Van Sickle, Executive Secretary	897.47
Aug. 14, to cash received from Dr. W. F. Donaldson, membership dues	10.00
Aug. 14, to cash received from Dr. F. L. Van Sickle, Executive Secretary	191.12
Aug. 14, to cash received from Medical defense fund in payment of vouchers drawn against said fund	912.00
Aug. 14, to cash received from Medical benevolence fund in payment of vouchers drawn against said fund	711.12
Total receipts	$92,161.01

Expenditures

Order No.		
	1922	
1.	Oct. 21, by cash, Miller Bros. & Co., Rent, Harrisburg Office	$70.00
2.	Oct. 21, by cash, Mary S. Blair, Business Mgr., Exec. Secy's Office	150.00
3.	Oct. 21, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
4.	Oct. 21, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
5.	Oct. 21, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
6.	Oct. 21, by cash, J. B. Lowman, Building & Loan Investment	100.00
7.	Oct. 21, by cash, Mary Hunter, Stenographer to Secretary	97.50
8.	Oct. 21, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
9.	Oct. 21, by cash, J. B. F. Wyant, Expense as Trustee	40.72
10.	Oct. 21, by cash, W. A. Challener, Medical Defense Fund	75.00
11.	Oct. 21, by cash, Evangelical Press, September Journal—balance	233.58
12.	Oct. 21, by cash, Evangelical Press, Binding three volumes of Penna. Med. Journal ...	9.97
13.	Oct. 21, by cash, Evangelical Press, Programs for Scranton meeting, and Official Transactions	200.94
14.	Oct. 21, by cash, Grant L. Bell, Auditing Treasurer's Books	30.00
15.	Oct. 21, by cash, F. L. Van Sickle, Expense, Traveling	17.09
16.	Oct. 21, by cash, Louis Weber & Son, Gavel for President	20.50
17.	Oct. 21, by cash, Miller Brothers & Co., Rent, Harrisburg Office	70.00
18.	Oct. 21, by cash, Walter F. Donaldson, Expense, Scranton Meeting	182.10
19.	Oct. 21, by cash, Smith & Howley Co., Electric Wiring, Scranton	130.00
20.	Oct. 21, by cash, American Surety Co. of New York, Premium on bonds of Secretary and Treasurer	50.00
21.	Oct. 21, by cash, Walter F. Donaldson, Cash advanced for Secretaries' Conference	45.00
22.	Oct. 21, by cash, Ida L. Little, Expense, Scranton Meeting	47.45
23.	Oct. 21, by cash, Hyacinth Beard, Expense, Scranton Meeting	41.07
24.	Oct. 21, by cash, Walter F. Donaldson, Expense, Scranton Meeting	46.20
25.	Oct. 21, by cash, Evangelical Press, Printing .	10.30
26.	Oct. 21, by cash, Mary S. Blair, Expense, Scranton Meeting	45.47
27.	Oct. 21, by cash, F. L. Van Sickle, Expense, Scranton Meeting	76.14
28.	Oct. 31, by cash, T. B. Appel, Traveling Expense as Delegate, Delaware State Society	8.71
29.	Oct. 31, by cash, H. T. Price, Expense, Scranton Meeting	4.00
30.	Oct. 31, by cash, Clifford G. Grulee, Expense, Scranton Meeting,	85.00
31.	Oct. 31, by cash, Lawrence Litchfield, Traveling Expense as President	7.00
32.	Oct. 31, by cash, C. B. Longenecker, Expense, Scranton Meeting	29.04
33.	Oct. 31, by cash, F. L. Van Sickle, Bonus, Journal Advertising	500.00
34.	Oct. 31, by cash, All Steel Equipment Co., Cupboard, Secretary's Office	48.00
35.	Oct. 31, by cash, William Whitford, Reporting Scranton Meeting	232.04
36.	Oct. 31, by cash, B. S. Oppenheimer, Expense, Scranton Meeting	20.00
37.	Oct. 31, by cash, Sydney R. Miller, Expense, Scranton Meeting	41.80

38. Oct. 31, by cash, W. A. Challener, Medical Defense	200.00
39. Nov. 18, by cash, Scranton Printing Co., Stationery	11.00
40. Nov. 18, by cash, Evangelical Press, October Journal	1,220.05
41. Nov. 18, by cash, Harold R. Mixsell, Expense, Scranton Meeting	14.00
42. Nov. 18, by cash, McCloy & Company, Book Case, Secretary's Office	27.20
43. Nov. 18, by cash, Walter F. Donaldson, Expense, Secretary's Office	32.25
44. Nov. 18, by cash, Mary Hunter, Stenographer to Secretary	70.00
45. Nov. 18, by cash, Jenkins Arcade Co., Rent, Secretary's Office	30.00
46. Nov. 18, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
47. Nov. 18, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary	150.00
48. Nov. 18, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
49. Nov. 18, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
50. Nov. 18, by cash, J. B. Lowman, Building & Loan Investment	100.00
51. Nov. 18, by cash, Edward B. Heckel, Interest on Benevolence Fund	378.66
52. Nov. 18, by cash, The Progressive Press, Printing Receipt Books	95.00
53. Nov. 18, by cash, F. L. Van Sickle, Expense, Scranton Meeting	1,963.50
54. Dec. 5, by cash, Mrs. M. C. Repp, Reporting, Scranton Meeting	115.00
55. Dec. 5, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
56. Dec. 5, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary	150.00
57. Dec. 5, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
58. Dec. 5, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
59. Dec. 5, by cash, Mary Hunter, Stenographer to Secretary	70.00
60. Dec. 5, by cash, Walter F. Donaldson, Quarterly Salary as Secretary	450.00
61. Dec. 5, by cash, Ida L. Little, Stenographer to Secretary	90.00
62. Dec. 5, by cash, J. B. Lowman, Quarterly Salary as Treasurer	50.00
63. Dec. 5, by cash, B. J. Myers, Quarterly Salary, Legal Counsel	75.00
64. Dec. 5, by cash, J. B. Lowman, Building & Loan Investment	100.00
65. Dec. 5, by cash, Evangelical Press, Journal for November	1,333.37
66. Dec. 5, by cash, National Printing Co., Printing	70.50
67. Dec. 8, by cash, Walter E. Dandy, Expense, Scranton Meeting	32.32
68. Dec. 23, by cash, W. S. Brenboltz, Expense, Trustee and Councilor	20.83
69. Dec. 23, by cash, J. B. F. Wyant, Expense, Meeting of Board of Trustees	25.74
70. Dec. 23, by cash, National Printing Co., Printing	36.00
71. Dec. 23, by cash, E. S. Joseph, Insurance, Office of the Executive Secretary	9.24
72. Dec. 23, by cash, Jesse L. Lenker, Purchase of permanent quarters, Harrisburg	17,000.00
73. Dec. 23, by cash, Lincoln Trust Co., Reinvestment of Special Funds	19,500.00
1923	
74. Jan. 6, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
75. Jan. 6, by cash, H. W. Mitchell, Expense, meeting of Board of Trustees	23.60
76. Jan. 6, by cash, James M. Lingle, Reporting, Scranton Meeting	451.33
77. Jan. 18, by cash, Evangelical Press, Journal for December,	1,303.20
78. Jan. 18, by cash, Harris P. Mosher, Expense, Scranton Meeting	46.96
79. Jan. 18, by cash, W. H. Sears, Expense, Scientific Program Committee	38.50
80. Jan. 18, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
81. Jan. 18, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary	150.00
82. Jan. 18, by cash, Hyacinth Beard, Stenographer to Executive Secretary	100.00
83. Jan. 18, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
84. Jan. 18, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
85. Jan. 18, by cash, J. B. Lowman, Building & Loan Investment	100.00
86. Jan. 18, by cash, Mary Hunter, Stenographer to Secretary	75.00
87. Jan. 18, by cash, F. L. Van Sickle, Petty Cash	300.00
88. Jan. 18, by cash, Lawrence Litchfield, Traveling Expense as President	45.46
89. Jan. 18, by cash, Evangelical Press, Printing	114.81
90. Jan. 18, by cash, William H. Mayer, Expense, Committee on Revision of Constitution and By-Laws	45.82
91. Feb. 9, by cash, Evangelical Press, Journal for January	1,330.81
92. Feb. 9, by cash, Evangelical Press, Printing	5.87
93. Feb. 9, by cash, David Marine, Expense, Scranton Meeting	20.00
94. Feb. 27, by cash, U. S. National Bank, Safe Deposit Box	3.00
95. Feb. 27, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
96. Feb. 27, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary	150.00
97. Feb. 27, by cash, Hyacinth Beard, Stenographer to Executive Secretary	110.00
98. Feb. 27, by cash, Miller Bros. & Co., Rent, Harrisburg Office	70.00
99. Feb. 27, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
100. Feb. 27, by cash, J. B. Lowman, Building & Loan Investment	100.00
101. Feb. 27, by cash, Mary Hunter, Stenographer to Secretary	75.00
102. Feb. 27, by cash, Theresa Magee, Reporting, Scranton Meeting	150.00
103. Feb. 27, by cash, F. L. Van Sickle, Cash advanced on account of 1923 Session	150.00
104. Feb. 27, by cash, Walter F. Donaldson, Petty Cash,	200.00
105. Feb. 27, by cash, Pennsylvania State Chamber of Commerce, Dues	25.00
106. Feb 27, by cash, E. S. Joseph, Insurance, Harrisburg Office	22.50
107. Feb. 27, by cash, Office Equipment Company, Ledger Outfit	10.00
108. Feb. 27, by cash, Benno Jansen, Plans, William Penn Hotel, 1923 Session	36.00
109. Feb. 27, by cash, (Void)	
110. Feb. 27, by cash, F. H. Gerlock & Co., Printing, Commission on Cancer	40.60
111. Feb. 27, by cash, Obrana Publishing Co., Printing, Commission on Cancer	14.50
112. Mar. 14, by cash, H. A. Miller, Expense, Scientific Program Committee	27.00
113. Mar. 14, by cash, W. M. Bortz, Expense, Scientific Program Committee	21.09
114. Mar. 14, by cash, Lawrence Litchfield, Expense, Committee on Public Relations	54.37
115. Mar. 14, by cash, Mary S. Blair, Business Mgr., Office Exec. Secy.	150.00
116. Mar. 14, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
117. Mar. 14, by cash, Hyacinth Beard, Stenographer to Executive Secretary	110.00
118. Mar. 14, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
119. Mar. 14, by cash, Mary Hunter, Stenographer to Secretary	75.00
120. Mar. 14, by cash, J. B. Lowman, Building and Loan Investment	100.00
121. Mar. 14, by cash, W. F. Donaldson, Quarterly Salary as Secretry	450.00
122. Mar. 14, by cash, J. B. Lowman, Quarterly Salary as Treasurer	50.00
123. Mar. 14, by cash, Ida L. Little, Quarterly Salary, Stenographer to Secretary	90.00
124. Mar. 14, by cash, B. J. Myers, Quarterly Salary, Legal Counsel	75.00
125. Mar. 14, by cash, Evangelical Press, JOURNAL for February	1,337.68
126. April 2, by cash, Evangelical Press, JOURNAL for March	1,346.71
127. April 2, by cash, Evangelical Press, Printing	4.25
128. April 2, by cash, Grant L. Bell, Developing and installing new Accounting System	600.00
129. April 2, by cash, W. A. Challener, Medical Defense	100.00
130. April 2, by cash, F. L. Van Sickle, Remodeling permanent quarters	3,000.00
131. April 2, by cash, J. B. Knapp, Flowers for Dr. Stevens	20.00
132. April 2, by cash, American Surety Co., Premium on bond of Executive Secretary	6.25
133. April 21, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
134. April 21, by cash, Hyacinth Beard, Stenographer to Executive Secretary	110.00
135. April 21, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary	150.00
136. April 21, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
137. April 21, by cash, Mary Hunter, Stenographer to Secretary	75.00
138. April 21, by cash, Office Service Co., Multigraphing, Committee on Public Relations	18.05
139. April 21, by cash, S. R. Haythorn, Expense, Committee on Public Relations	43.75
140. April 21, by cash, J. B. Lowman, Building and Loan Investment	100.00
141. April 21, by cash, Walter F. Donaldson, Expense, Board of Trustees Meeting	10.50
142. April 21, by cash, National Printing Co., Printing	19.50
143. April 21, by cash, H. F. Oves, City Tax on Permanent Quarters	135.13
144. May 10, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00

145. May 10, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary	150.00
146. May 10, by cash, Hyacinth Beard, Stenographer to Executive Secretary	110.00
147. May 10, by cash, Mary Hunter, Stenographer to Secretary	75.00
148. May 10, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
149. May 10, by cash, F. L. Van Sickle, Rent, Permanent Quarters	150.00
150. May 10, by cash, National Printing Co., Printing	8.00
151. May 10, by cash, J. B. Lowman, Building and Loan Investment	100.00
152. May 10, by cash, W. F. Donaldson, Expense, Meeting of Board of Trustees	4.00
153. May 10. by cash, Evangelical Press, JOURNAL for April	1,368.28
154. May 10, by cash, F. L. Van Sickle, Petty Cash	300.00
155. May 10, by cash, Lawrence Litchfield, Traveling Expense as President	84.72
156. May 25, by cash, H. J. Benz, Expense, Committee on Public Relations	9.43
157. May 25. by cash, E. S. Joseph, Insurance, permanent quarters	22.48
158. May 25, by cash, H. W. Mitchell, Expense, Meeting of Board of Trustees	27.34
159. May 25, by cash, Harnies & Salisbury, Workmen's Compensation	10.00
160. June 1, by cash, W. A. McConnell, Medical Defense	50.00
161. June 1, by cash, Dives, Pomeroy & Stewart, Expense, Permanent Quarters	246.43
162. June 1, by cash, Harrisburg Hardware Co., Expense, Permanent Quarters	25.50
163. June 1, by cash, Office Equipment Co., Expense, Permanent Quarters	20.35
164. June 7, by cash, Evangelical Press, JOURNAL for May	1,406.45
165. June 7, by cash, P. A. Wilbert, Medical Defense	87.00
166. June 8, by cash, Evangelical Press, Printing	36.75
167. June 8, by cash, Evangelical Press, Printing	22.85
168. June 8, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
169. June 8, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary	150.00
170. June 8, by cash, Hyacinth Beard, Stenographer to Executive Secretary	110.00
171. June 8, by cash, F. L. Van Sickle, Rent, Permanent Quarters	75.00
172. June 8, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
173. June 8, by cash, Mary Hunter, Stenographer to Secretary	75.00
174. June 8, by cash, Walter F. Donaldson, Quarterly salary as Secretary	450.00
175. June 8, by cash, Ida L. Little, Quarterly salary, Stenographer to Secretary	90.00
176. June 8, by cash, J. B. Lowman, Quarterly salary as Treasurer	50.00
177. June 8, by cash, J. B. Lowman, Building and Loan Investment	100.00
178. June 8, by cash, B J. Myers, Quarterly salary, Legal Counsel	75.00
179. June 18, by cash, Burns & Company, Arm Chair, office of Executive Secretary	19.00
180. June 18, by cash, Bowman & Company, Water Cooler, office of Executive Secretary	22.50
181. June 18, by cash, Adam J. Simpson, Expense, Scientific Program Committee	26.00
182. June 18, by cash, E. B. Heckel, Interest on Medical Benevolence Fund	332.46
183. June 18, by cash, W. A. Challener, Medical Defense Fund	150.00
184. July 14, by cash, Evangelical Press, JOURNAL for June	1,401.17
185. July 14, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
186. July 14, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary	150.00
187. July 14, by cash, Hyacinth Beard, Stenographer to Executive Secretary	110.00
188. July 14, by cash, F. L. Van Sickle, Rent, Permanent Quarters	75.00
189. July 14, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
190. July 14, by cash, Mary Hunter, Stenographer to Secretary	80.00
191. July 14, by cash, J. B. Lowman, Building and Loan Investment	100.00
192. July 31, by cash, Evangelical Press, JOURNAL for July	1,389.42
193. Aug. 13, by cash, T. B. Rockafellar, County Tax, permanent quarters	59.85
194. Aug. 13, by cash, H. F. Oves, School Tax, permanent quarters	178.50
195. Aug. 13, by cash, Duling & Co., Awnings, permanent quarters	74.00
196. Aug 13, by cash, John F. Twig, Carpenter Work, permanent quarters	47.81
197. Aug. 13, by cash, Ross O'Brine, Plumbing, permanent quarters	86.36
198. Aug. 13, by cash, Harrisburg Light & Power Co., Steam Service, permanent quarters	220.00
199. Aug. 13, by cash, Robbins Manufacturing Co., Screens, permanent quarters	190.00
200. Aug. 13, by cash, American Medical Association, 1923 Medical Directory	12.00
201. Aug. 13, by cash, National Printing Co., Printing	8.25
202. Aug. 13, by cash, John A. Coyle, Medical Defense Fund,	250.00
203. Aug. 13, by cash, Charles Falkowsky, Expense, Scientific Program Committee	19.64
204. Aug. 13, by cash, T. G. Simonton, Expense, Scientific Program Committee	52.00
205. Aug. 13, by cash, Evangelical Press, Printing, Committee on Public Relations	25.80
206. Aug. 13, by cash, F. G. Fahnestock, Jr., Architectural Service, Permanent Quarters	65.00
207. Aug 13, by cash, Ira G. Shoemaker, Expense, Trustee and Councilor	42.64
208. Aug. 13, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
209. Aug. 13, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary	150.00
210. Aug 13, by cash, Hyacinth Beard, Stenographer to Executive Secretary	110.00
211. Aug. 13, by cash, J. B. Lowman, Building and Loan Investment	100.00
212. Aug. 13, by cash, E. A. Shumway, Treasurer, Refund to Phila. Co. Society a|c Medical Defense	493.75
213. Aug. 13, by cash, F. L. Van Sickle, Rent, permanent quarters	75.00
214. Aug. 13, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
215. Aug. 13, by cash, Mary Hunter, Stenographer to Secretary	80.00
216. Aug. 13, by cash, F. H. Gerlock Co., Printing, Commission on Cancer	40.00
217. Aug. 13, by cash, I. J. Moyer, Expense, Trustee and Councilor	65.81
218. Aug. 13, by cash, L. Weber & Son, Gavel for retiring President	20.85
219. Aug. 17, by cash, F. L. Van Sickle, Salary as Executive Secretary	375.00
220. Aug. 17, by cash, Mary S. Blair, Business Mgr., Office Executive Secretary	150.00
221. Aug. 17, by cash, Hyacinth Beard, Stenographer to Executive Secretary	110.00
222. Aug. 17, by cash, F. L. Van Sickle, Agent, Rent for office, September	75.00
223. Aug. 17, by cash, J. B. Lowman, Building and Loan Investment, September	100.00
224. Aug. 17, by cash, Mary Hunter, Stenographer to Secretary	80.00
225. Aug. 17, by cash, B. J. Myers, Quarterly salary, Legal Counsel	75.00
226. Aug. 17, by cash, J. B. Lowman, Quarterly Salary as Treasurer	50.00
227. Aug. 17, by cash, Ida L. Little, Stenographer to Secretary	75.00
228. Aug. 17, by cash, W. F. Donaldson, Quarterly salary, Secretary	450.00
229. Aug 17, by cash, The Evangelical Press, JOURNAL for August	1,313.37
230. Aug. 17, by cash, The Evangelical Press, Estimated cost of JOURNAL for September	1,350.00
231. Aug. 17, by cash, The Evangelical Press, Printing membership list for 1923	275.00
232. Aug. 17, by cash, J. B. Lowman, Treasurer, Adjustment of error in computing allotments from 1921 per capita tax collected in 1922	3.15
233. Aug. 17, by cash, J. B. Lowman, Treasurer, Per capita allotment to Medical Defense Fund, August 17, 1922, to February 1, 1923	1,063.87
234. Aug. 17, by cash, J. B. Lowman, Treasurer Per capita allotment to Medical Benevolence Fund, August 17, 1922, to February 1, 1923	212.78
Total Expenditures, General Fund	$82,307.08

NOTE: Subsequent to February 1, 1923, allotments to the Medical Defense Fund and Medical Benevolence Fund were withheld from the General Fund and carried in these accounts respectively.

CLASSIFIED STATEMENT OF RECEIPTS

September 1, 1922, to September 1, 1923

GENERAL FUND

Cash on hand September 1, 1922		$21,602.77
Received allotments from membership per capita tax	$30,106.30	
Received from Executive Secretary and Editor	12,661.54	
Transferred from special funds for reinvestment	19,500.00	
Received difference between amount transferred and amount invested	58.58	
Received from special funds in payment of vouchers drawn against said funds	1,623.12	63,949.54
Total		$85,552.31

MEDICAL DEFENSE FUND

Cash on hand September 1, 1922		$18,140.03
Received interest on investments	$618.75	
Received interest on deposits	326.89	
Received allotments from membership per capita tax	5,507.25	6,452.89
Total		$24,592.92

MEDICAL BENEVOLENCE FUND

Cash on hand September 1, 1922		$4,124.22
Received interest on investments	$510.38	
Received interest on deposits	80.97	
Received allotments from membership per capita tax	1,101.45	1,692.80
Total		$5,817.02

ENDOWMENT FUND

Cash on hand September 1, 1922		$1,010.43
Received interest on investments	$340.00	
Received interest on deposits	22.16	362.16
Total		$1,372.59
Total Receipts		$117,334.84

CLASSIFIED STATEMENT OF EXPENDITURES

September 1, 1922, to September 1, 1923

GENERAL FUND

Purchase and improvement of permanent headquarters	$21,394.91	
Endowment Fund for investment	1,200.00	
JOURNAL for year	16,334.09	
Salaries:		
Executive Secretary and Editor	4,500.00	
Secretary	1,800.00	
Treasurer	200.00	
Legal Counsel	300.00	
Assistants, Executive Secy's Office	3,080.00	
Stenographers, Secretary's Office	1,272.50	
Expense, Secretary's office, for rent, equipment, printing, etc.	667.45	
Expense, Exec. Secy's office, for rent, equipment, etc.	2,197.83	
Expense, Gavels for Presidents	41.35	
Expense, Premiums on bonds of Exec. Secy., Secretary and Treasurer	56.25	
Expense, Annual meeting, 1922	4,030.36	
Expense, Annual meeting, 1923	36.00	
Expense, Printing and stationery	717.05	
Expense, Rental safe deposit box, Treas.	3.00	
Expense, Annual dues to Penna. Chamber of Commerce	25.00	
Expense, President's traveling expense	137.18	
Expense, Committees, Councilors and Trustees traveling expense	745.44	
Expense, Auditing books of Treasurer	30.00	
Expense, Installing new accounting system	600.00	
Expense, State Workmen's Compensation Insurance	10.00	
Expense, American Medical Directory	12.00	
Expense, Flowers for Dr. C. L. Stevens	20.00	
Reinvestment of special funds	19,500.00	
Current expenditures of special funds	1,623.12	
Per Capita tax allotment to special funds	1,279.80	
Refund on medical defense allotment	493.75	
Total		$82,307.08

SPECIAL FUNDS

Expended for reinvestment as follows:		
Medical Defense Fund,		
Purchased American T. & T. bonds, 5%, due 1946, interest payable June 1st and December 1st, Par	$10,000.00	
Purchased Liberty Bonds, 4¼%, Par	5,000.00	
Medical Benevolence Fund,		
Purchased Liberty Bonds, 4¼%, Par	3,500.00	
Endowment Fund,		
Purchased Liberty Bonds, 4¼%, Par	1,000.00	
Current expenditures of special funds reimbursing general fund	1,623.12	
Total		$21,123.12
Total Disbursements		$103,430.20

STATEMENT OF CASH BALANCES AND INVESTMENTS

September 1, 1923

CASH

General Fund	$3,245.23	
Medical Defense Fund	8,680.92	
Medical Benevolence Fund	1,605.90	
Endowment Fund	372.59	
		$13,904.64

MEDICAL DEFENSE FUND

Wilkes-Barre City Improvement Bonds, Nos. 96, 97, 98, series 1, 4½%, par value $1,000.00	$3,000.00	
American Telephone & Telegraph, 1946 series, 5%, par value	10,000.00	
Liberty Bonds	8,000.00	
		21,000.00

MEDICAL BENEVOLENCE FUND

Wilkes-Barre City Improvement Bond No. 94, series 1, 4½%, par value	$1,000.00	
Liberty Bonds	12,700.00	
		13,700.00

ENDOWMENT FUND

100 shares Peoples' Building and Loan Association stock, 81 installments	$8,100.00	
Liberty Bonds	6,000.00	
		14,100.00

REAL ESTATE

Invested in permanent quarters, Harrisburg	$17,000.00	
Cost of repairs and improvements to building	4,394.91	
		21,394.91
Total Cash Balances and Investments, Sept. 1, 1923		$84,099.55

SUMMARY STATEMENT OF CASH BALANCES, RECEIPTS AND EXPENDITURES

September 1, 1922, to September 1, 1923

	Total	General Fund	Medical Defense Fund	Medical Benevolence Fund	Endowment Fund
Cash balance, Sept. 1, 1922	$44,877.45	$21,602.77	$18,140.03	$4,124.22	$1,010.43
Receipts:					
Membership per capita tax	$36,715.00	$30,106.30	$5,507.25	$1,101.45	....
Account of Executive Secretary and Editor	12,661.54	12,661.54	....	....	....
Interest on investments and deposits	1,899.15	....	945.64	591.35	362.16
Difference between amount transferred for investment and amount expended	58.58	58.58	....	....	....
Total receipts, Sept. 1, 1922, to Sept. 1, 1923	$51,334.27	$42,826.42	$6,452.89	$1,692.80	$362.16
Total receipts, including balances Sept. 1, 1922	96,211.72	64,429.19	24,592.92	5,817.02	1,372.59
Transfers of Funds	....	21,123.12	15,912.00	4,211.12	1,000.00
Total balances and receipts	$96,211.72	$85,552.31	$8,680.92	$1,605.90	$372.59
Expenditures, Sept. 1, 1922, to Sept. 1, 1923	82,307.08	82,307.08	....	....	....
Balances, Sept. 1, 1923	$13,904.64	$3,245.23	$8,680.92	$1,605.90	$372.59

*Transferred from.
**Transferred to

Respectfully submitted,
J. B. LOWMAN, *Treasurer.*

REPORT OF THE CHAIRMAN OF THE BOARD OF TRUSTEES

To the President and the House of Delegates:

The Board of Trustees reorganized on October 4, 1922, by electing the undersigned Chairman, and Dr. Donald Guthrie Clerk for the ensuing year.

The various committees of the Board were appointed with a request that each committee should select its own officers.

Committee on Finance: Dr. Albertson, Chairman, Drs. Guthrie and Brenholtz.

Committee on Publication of JOURNAL: Dr. Shoemaker, Chairman, Drs. Appel and Hammond.

Committee on Conduct of Executive Secretary's Office: Dr. Mitchell, Chairman, Drs. Moyer and Quigley.

The reports of the Secretary, Dr. Donaldson; of the Executive Secretary, Dr. Van Sickle; and of the Chairman of the Committee on Public Health Legislation, Dr. Knowles, were received and considered. The auditor's report of the last year was accepted and filed. The Finance Committee presented the budget for the ensuing year. This was discussed and adopted.

At the regular stated meeting, December 5, 1922, the members of the Board of Trustees each gave a report of the counties comprising their various districts.

The Board approved the list of securities selected by the Finance Committee and Treasurer of the Society for the investment of money from the Medical Defense, Medical Benevolence and Endowment Funds. The reports of the Secretary and Executive Secretary were received, considered and adopted.

It was concluded from discussion that the combination of the Journal of the Medical Society of the State of Pennsylvania with that of the Medical Society of Delaware would result in a greater and a wider field of usefulness. The Journal Committee, through Dr. Appel, reported that the committee was at work and would report finally at the February meeting.

On account of rents advancing and desirable locations being hard to secure, the Board authorized the Finance Committee to option property for permanent quarters for the State Society in Harrisburg.

A regular stated meeting of the Board was held February 6, 1923. The reports of the Secretary, Executive Secretary, and the Trustees of the various districts were received and approved.

The report of the Committee on Permanent Quarters resulted in the approval by the Board of the purchase of an improved property at 230 State St., Harrisburg, at an attractive figure.

Action on the final report of the Journal Committee resulted in the consolidation of the *Pennsylvania Medical Journal* with the *Delaware State Medical Journal.* The first issue of the consolidated journal, the Atlantic Medical Journal, appeared in April, 1923.

The Committee on Public Health Legislation reported on their work in the 1923 Legislature.

The Committee on Conduct of the Executive Secretary's Office was instructed to assume responsibility for the upkeep of the Society's improved property, as well as renting certain portions of the same.

The Finance Committee reported the purchase of bonds and securities for the Medical Defense, Medical Benevolence and Endowment Funds.

There was a regularly stated meeting of the Board May 1, 1922. The reports of the Secretary, Executive Secretary, standing committees and Councilors were received.

A new accounting system was installed in the various offices of the Society. Action was taken looking to improvement in our representation annually in the House of Delegates of the American Medical Association.

Your Board of Officers would suggest that the members of the House of Delegates act as missionaries in the various fields from whence they come and build up the county medical societies. Let the slogan be "Every Eligible Physician a Member." We must all be willing to make every effort to maintain high standards in the practice of our chosen profession.

Jay B. F. Wyant, *Chairman.*

REPORTS OF INDIVIDUAL COUNCILORS

DR. FRANK C. HAMMOND, PHILADELPHIA, COUNCILOR FOR THE FIRST DISTRICT

To the President and the House of Delegates:

An Executive Office was opened by the Philadelphia County Medical Society on January 1, 1923, Franklin M. Crispin being appointed Executive Secretary. At this office the detail of all routine business of the Society is conducted. The Executive Secretary acts as Clerk of the Board of Directors and attends all committee meetings where his presence is required. By a centralization of the work of the Society through this office, it is found that its affairs, including the committee work, function better and more expeditiously; that the machinery is always ready to handle any new or larger activities which the Society may decide to conduct; and that the officers and committeemen are relieved of much of the irksome detail with which they have heretofore necessarily been burdened. Thus busy physicians are enabled to accept active appointments in the Society, knowing that notices of meetings, records, and other detail will be cared for through the Executive Office.

All this is being accomplished at practically the same cost to the Society as heretofore. There necessarily will be a gradually increasing cost due to the increasing and larger activities which the Society is thus enabled to conduct.

The Medical Defense Committee has been functioning actively, and all cases have been successfully defended.

Splendid programs have been arranged for the scientific meetings, which have been fairly well attended. The committees at large have been functioning as usual. Among new committees to be appointed are:

Committee on Diphtheria Prevention. This committee is working in conjunction with the Board of Health and has been very active. It conducted an active campaign during Diphtheria Prevention Week and it has had a number of recent meetings at the office of the Director of Public Health where plans for the fall have been promulgated. A Committee on Health Examinations has been appointed to confer as to the advisability of requesting patients to report at stated intervals for examination, with a view to the prevention of disease. A Committee on Radio Broadcasting was appointed to make radio health talks to the public. Several talks were given and this practice will be continued in the fall. A Committee on the Seventy-fifth Anniversary has been appointed. No specific plans have been announced by this committee, except that it has secured the Ball Room of the Bellevue for January 16, 1924, the date of the anniversary. Announcements will be made in the early fall. A Committee on Sesqui-Centennial has been appointed to act in conjunction with the Executive Committee of the Sesqui-Centennial in supervising medical exhibits, etc., if deemed advisable. A Committee on The Nursing Problem reported at a recent meeting of the Society. The report was of an extremely constructive nature and this work will be carried on in the fall along the lines of its recommendations. The Workmen's Compensation Committee has been extremely active. A strenuous attempt was made to have passed through the Pennsylvania Legislature, a Workmen's Compensation Bill acceptable to physicians. A monster petition, signed by about fifteen hundred of the members of the Philadelphia County Medical Society was prepared and presented to the Legislature. Letters have been sent to the Philadelphia Assemblymen and the active coöperation of the other county societies of the state has been solicited. While such a bill was not passed to date, due to the large corporation interests in all probability, still no adverse legislation has been passed. It has placed the Philadelphia County Medical Society and all the county societies decidedly on record and will unquestionably affect any future legislation which may be passed.

A gift of $2,000 was received from Doctor J. M. Anders, Chairman of the Library Committee, the interest of which will be equally divided between the Northeast and Northwest Branches for library purposes. A gift of $5,000 (held in trust) was made by Dr. Isadore P. Strittmatter, the income of which is to be used annually for awarding a gold medal to any doctor presenting to the Philadelphia County Medical Society the most valuable contribution to the healing art. There are other stipulations mentioned.

A system of compiling biographical records of the members of the Philadelphia County Medical Society, past and present, is being established.

There has been much activity in regard to the purchase of a home for the Society. The retiring President, Dr. J. Norman Henry, urged such a purchase in his address before the Society last January. Dr. John W. West, Chairman of the Committee on Home of the Society; Dr. John F. Roderer, Chairman of the Committee on Executive Office, and the Board of Trustees have been active exponents of such a purchase. A special meeting of the Society was called recently to secure the sentiment of the members towards the project. Finally, the Board of Directors, at a meeting held July 11th, authorized the purchase of a building at 1916-1918 Race Street, adjoining the Academy of Natural Sciences and fronting on Parkway. An offer has been made for the property but the sale is not yet consummated nor will it be known for several weeks whether the offer will be accepted.

DR. HARRY W. ALBERTSON, SCRANTON, COUNCILOR FOR THE SECOND DISTRICT

To the President and House of Delegates:

The year just ended in the Second Councilor District has been one of the most successful in the history of organized medicine in the counties comprising the district.

Of the eight counties in this district, four have increased their membership, two have the same membership as last year, and two have fallen below by but one member each. This, we feel, is the result of the activities of the local officers of each of the several component county societies, and is a very commendable showing of interest. I have kept in touch with the work carried on in each county, and find everywhere a yearly increase in interest in scientific medicine, in public health measures and in legislation.

During the past year the Lackawanna County Medical Society has conducted a postgraduate course among its members, the lecturers being furnished by the Postgraduate School of the University of Pennsylvania. Clinics and demonstrations were held weekly in hospitals and dispensaries in Scranton, and lectures were conducted in the rooms of the Medical Society in the evening. At the close of the term a selected number of the class demonstrated and reviewed the work gone over during the course at a general meeting of the Society. A live interest in this work was manifested by the unusually good attendance at both clinics and lectures, and already plans are under way for more advanced work for next year.

Several other counties in this district have plans under way for similar courses of study in postgraduate extension work, and lectures will be held during the coming winter.

The campaign to combat diphtheria in this state, as instituted by the Committee on Public Relations, was well received. In each county, meetings were held by the respective societies dealing with the newer phases of the prevention and treatment of diphtheria, and in several, public meetings were held and speakers provided who brought the advances in preventive medicine forcefully to the attention of the laity.

We feel that this is a step in the right direction, and that in the future other matters which concern public health should be taken up in a state-wide campaign and the public informed of the attitude of the organized medical profession and what it is doing to safeguard the health of the state.

Never, to my knowledge, has a more lively interest been shown by the profession generally in the enactment of the public health measures than that shown during the session of the Legislature of the past winter. At all the meetings of the societies comprising this district, questions were asked and a live interest displayed in things of a legislative nature, and at all times there was a willingness on the part of the membership to assist both financially and by personal effort in the enactment of laws which would more efficiently guard the health of the public.

There are in this district two cases of alleged malpractice, in which suits have been brought against members to recover damages; but after careful investigation, I feel that neither of these cases has any merit in fact, and I am equally as certain that neither case will ever come to trial.

We wish to take this opportunity to congratulate the officers of the component county societies comprising this district for their activities shown during the past year, and the membership at large for the hearty coöperation and support given to the various activities of the Medical Society of the State of Pennsylvania.

DR. IRA G. SHOEMAKER, READING, COUNCILOR FOR THE THIRD DISTRICT

To the President and the House of Delegates:

Owing to certain conditions over which we had no control, we were not able to make our usual visitations to the societies in our district, but have been in touch with them and are pleased to report that conditions throughout the field are favorable. There has been practically no loss in membership and no application for assistance for alleged malpractice suits. The attendance at the monthly meetings has been up to the average. Schuylkill County has inaugurated a postgraduate course and reports splendid results.

DR. THEODORE B. APPEL, LANCASTER, COUNCILOR FOR THE FOURTH DISTRICT

To the President and House of Delegates:

The membership of the several county societies of the Fourth Councilor District shows a net loss of seventeen for the year ending July 1st. Adams County loses two; Cumberland, five; Franklin, two; Lancaster, six; and York, eight, while Dauphin gains four and Lebanon, one. As far as can be ascertained, the proportion of eligible men who are not members of societies is extremely small. An unusually large proportion of the loss in membership is due to death of older men who had been conducting rural practices and whose places have not been filled by new men. In many counties there is a continuous demand for young graduates to settle in the country sections, and with each year there seems to be increasing difficulty to secure men who will be willing to take up these practices. Bad roads and distance from hospitals and from larger towns are the excuses given. It is apparent that some organized effort should be made by the profession to provide some means by which small rural communities would be assured of proper medical service.

The several societies show satisfactory activity in their response to an appeal made by the Legislative Bureau during the session of the Legislature.

Medical Defense Case No. 143, brought as a claim for damages on account of vicious union of a fractured leg in the patient with a four plus Wassermann, came to trial at the spring term of court. There had been numerous offers of settlement from the attorney of the plaintiff, which were refused. He finally offered to accept a non-suit. This was also refused on the ground that the case might in the future be reopened, and the plaintiff was forced to trial. When he came before the court he was compelled to admit that he had no evidence and the court with a reprimand ordered a verdict of "Not guilty." The other medical defense cases in this district show no evidence of immediate progress.

DR. JOHN M. QUIGLEY, CLEARFIELD, COUNCILOR FOR THE FIFTH DISTRICT

To the President and House of Delegates:

Herewith is submitted the annual report of the Fifth Councilor District:

On April 30th, I called together the members of the Perry County Medical Society, which had ceased to function, and after having given them a talk on the need of having a live and working organization in their county, reorganized their society and held an election of officers, since which time they have been making an effort to hold regular monthly meetings instead of quarterly as before, with I believe, some success.

I visit the Clearfield County Medical Society monthly. This society is flourishing and full of activity.

On July 5th, I visited the Mifflin County Medical Society, which I found in good condition, took dinner with them and then resumed my journey to Mifflintown where I attended the quarterly meeting of that society. They are a small society but the spirit of the society seems good.

On July 11th, I visited the meeting of the Center County Medical Society and while the attendance was small, yet the spirit of the meeting was interesting. Their worst trouble is lack of interest in attendance at the meetings which are held monthly.

On August 9th, I attended a meeting of the Cambria County Medical Society which was held at Spangler with the largest attendance I have yet found except at some of the meetings of the Clearfield County Medical Society. We had dinner before the meeting, to which the ladies were invited. The papers presented were spicy and up to the minute and the discussion was general and very interesting. This society, the largest in the district, has increased its membership by five this year and is in a most flourishing condition.

This leaves but two societies in my district which I have not as yet visited, but I hope to visit these two, Huntingdon and Blair, both of which are in excellent condition, before the meeting of the State Society.

The whole district is therefore in a normal condition and interest and membership is on the increase.

We have had three deaths in the district during the year; one in each of the counties of Blair, Clearfield and Perry.

We have not held Censorial District meetings this year but the annual joint meeting of the county societies of central Pennsylvania will be held as usual at Tyrone in September, to which twelve county societies will be invited, and if history repeats itself, there will be an attendance of about two hundred and fifty physicians. This district looks forward to this meeting as the big event of the year in medical circles. It has been held regularly for ten years and has made for a larger acquaintance and a more profound fellowship among the medical men of the district and has promoted a greater and still greater interest in scientific medicine among the men of the district than any other one factor in our history.

There are no suits for alleged malpractice under way in this district at present and there have been none so far this year. One of the members of Cambria County was threatened last October but we have heard nothing of it since, and during the present month a member of Cambria County has been threatened but to date suit has not been instituted.

There are about sixty nonmembers in the district, among whom are a number of homeopaths who do not care to join. This indicates however the need of some activity on the part of the membership committees.

I have urged all the societies to carry out the campaign for diphtheria prevention but the response in Mifflin, Juniata and Perry Counties has so far been nil. In Center, Blair and Huntingdon Counties meetings have been held but I am unable to report the number of immunizations completed. In Clearfield County nothing has been done yet but plans are under way to begin the work as soon as school opens. In Cambria County a great work has been done, we are happy to report, and will continue. They have immunized between 15,000 and 16,000 school children and they expect to continue until every school child in the county shall have been immunized. The Secretary says, "The work will go on next school term and we hope to double this figure and we are now planning to immunize the pre-school age children."

This is a most laudable work and I am proud to represent a county society which stands in the front rank, as does this one, in such a splendid endeavor for the eradication of so dread a disease.

DR. IRWIN J. MOYER, PITTSBURGH, COUNCILOR FOR THE SIXTH DISTRICT

To the President and House of Delegates:

The Councilor of the Sixth District respectfully wishes to submit the following report for the year 1923:

Our members in the Sixth District are anxious to do all that is best for the public health.

A very enjoyable evening was spent with the Greene County Medical Society at Waynesburg, February 13, 1923. There was a good attendance and general discussion of important topics.

A good meeting of the Westmoreland County Medical Society was enjoyed by the Councilor at Greensburg, the evening of March 6, 1923. Active general discussion of timely topics made the occasion very interesting.

The Second Annual Clinic of the Westmoreland County Medical Society at the Westmoreland Hospital, Greensburg, in April, 1923, was a splendid affair. It was attended by about two hundred and seventy-five physicians from many towns of Western Pennsylvania. The clinic was in charge of Doctor Thomas McCrea, Professor of Medicine, Jefferson Medical College, and Doctor W. Wayne Babcock, Professor of Surgery, Temple University, Philadelphia.

The March, 1923, meeting of the Washington County Medical Society in their new meeting place, the George Washington Hotel, was well attended. A Symposium on Communicable Diseases by Doctors Hazlett, Sargent and Martin was well presented. After this followed a discussion of the importance of having public coöperation in the isolation and quarantine of communicable diseases; in vaccination; and in the rational scientific control of animal experimentation.

At the June 7, 1923, meeting of the Fayette County Medical Society, held at Uniontown, the Councilor urged the necessity for continued efforts by the county medical societies to interest the public, by all possible judicious methods, in approved sickness prevention measures. The importance of working through and with public welfare, church and civic organizations was especially advocated.

Within the year, up to August 1, 1923, seven suits for alleged malpractice have been filed in the Sixth District. Detailed reports of these are made by the Secretary.

In July the Secretary has receipted for 1,673 members in the Sixth District.

DR. HARRY W. MITCHELL, WARREN, COUNCILOR FOR THE SEVENTH DISTRICT

To the President and House of Delegates:

Numerous visits have been made to the various county societies during the past year and an effort has been made to keep the county medical society officers in touch with matters pertaining to the business of the medical society during the last session of the Legislature. The county societies are all actively organized and holding their well-attended meetings at stated intervals.

DR. DONALD GUTHRIE, SAYRE, COUNCILOR FOR THE EIGHTH DISTRICT

To the President and House of Delegates:

The condition of the societies in the Seventeenth and Eighteenth Censorial Districts during the past year has been extremely good. Your Councilor has been in correspondence with most of the secretaries and has visited all the counties in the district. There have been no suits entered or threatened for alleged malpractice, and no internal dissension of any kind as far as I can tell. The prospect for increased membership for the coming year seems very good.

I wish to report with a great deal of satisfaction the work of the Postgraduate Extension Group for Bradford County.

At its January meeting the Bradford County Medical Society acted favorably upon the invitation extended by the University of Pennsylvania, and proceeded to organize a Postgraduate Extension Group. The general response on the part of the members of the County Society was good, and in April the work was actually started with a class membership of twenty-eight. Many of these doctors came from distances of from twenty to forty-five miles.

Up to the present date (August, 1923), fourteen of the twenty-five weekly meetings have been completed. They have all been held at the Robert Packer Hospital, Sayre.

In looking back over the completed portion of the work, the following general conclusions can be drawn:

1. A high degree of satisfaction and enthusiasm on the part of the attending doctors.
2. A notably good attendance record.
3. A very sincere and effective effort on the part of the University faculty to make their teaching practical and valuable to the members of the course.

In reviewing the experiences at Sayre it is reasonable to state that every county society in the State of Pennsylvania should make a very definite effort to participate in this work, inaugurated by the University of Pennsylvania, and so ably carried out under the direction of Dean Meeker of the Graduate School of Medicine.

DR. JAY B. F. WYANT, KITTANNING, COUNCILOR FOR THE NINTH DISTRICT

To the President and House of Delegates:

The societies making up the Ninth District are in very good condition and usually hold meetings on scheduled time. Most of the societies have been visited during the year and the Councilor is pleased to state that splendid programs were carried out during Diphtheria Prevention Week. If the suggestions and instructions are carried out by the laity as given by the speakers much good will come.

Many of the counties have their usual good standing in membership, yet some physicians are not in the fold. Armstrong County, as has been her standing for some years. has one hundred per cent membership. It is earnestly hoped that this will become contagious and that all the societies throughout the state will have enrolled as members every eligible physician within their bounds. A little missionary work on the part of the members will soon bring this about.

Application for defense in alleged malpractice suits has been requested by two members, one from Jefferson County and one from Armstrong County.

Chiropractors and Osteopaths are coming and going. They have their following for a time and then these followers scatter back to consult practitioners of the old schools.

DR. WALTER S. BRENHOLTZ, WILLIAMSPORT, COUNCILOR FOR THE TENTH DISTRICT

To the President and House of Delegates:

The Councilor for the Tenth District presents his annual report for the year just closing with much pleasure, but with some misgiving.

It has been impossible to visit all of the societies, but all those visited had well attended meetings and showed that they are active medical organizations. The membership of the district has decreased by four since 1922, two of the societies showing a gain, three showing a loss and the other two societies maintaining the same membership as in 1922.

Two of the societies have not been visited as it has been impossible for the councilor to get replies from the secretaries to his letters, but it is hoped that it will be possible to visit these two societies before the annual meeting of the State Society.

All of the societies but one hold regular meetings, Union County Society, which meets only once or twice a year. At the annual meeting of this society in July, it was decided that in the future they would hold their annual meeting in January.

August 24th there will be a meeting in Williamsport under the auspices of the West Branch Medical Association to which all the members of the county societies in the Tenth District will be invited and urged to attend.

There have been no suits for alleged malpractice instituted in the Tenth District during the year, and no internal disturbances which required attention.

Because of the fact that changes were made in the make-up of the Eighth and Tenth Councilor Districts this year, everything has not worked out as well as might have been expected, but on the whole we feel that there is a closer relationship in the ranks of the medical men in the Tenth District than there was formerly, and more of the members interesting themselves in medical affairs.

REPORT OF DELEGATES TO THE 1923 SESSION OF THE AMERICAN MEDICAL ASSOCIATION

To the President and the House of Delegates:

Pursuant to the May 1, 1923, recommendations of the Board of Trustees, the Pennsylvania delegation to the 1923 House of Delegates of the American Medical Association met and organized prior to its attendance upon the first meeting in San Francisco, June 25th. Two meetings held were attended by six of our duly elected or appointed delegates, and the recorded actions of said meetings were later concurred in by the balance of our delegation.

After electing officers we discussed in detail the published recommendations contained in the reports of the various officers and committees of the American Medical Association.

We voted unanimously to favor the interim appointment or election of delegates from constituent state societies to replace previously chosen delegates finding it impossible to serve. We voted favorably on the institution of every possible form of help by the association to its constituent state societies in the development of Postgraduate Work among their members. We opposed the proposed changes in the Constitution and By-Laws affecting the present composition of the House of Delegates. We opposed the request of the Veterans' Bureau that they be granted representation in the House of Delegates. We approved the five-year term for members of the Board of Trustees. We approved making the President, President-Elect and Speaker of the House of Delegates, ex-officio members of the Board of Trustees. We approved of mailing the bulletins of the American Medical Association to all members of the Association. We voted as a unit in the election for President-Elect, Speaker of the House of Delegates and the choice of place for holding 1924 Session.

Our delegation had representatives on two reference committees of the House of Delegates and one of our members was Chairman of a special committee. Our entire delegation concurred with the recommendation of the Board of Trustees of the Medical Society of the State of Pennsylvania in its recommendation to our own House of Delegates that delegates chosen from our own society to the American Medical Association should be "representative members, qualified by medical organization experience to serve promptly, efficiently and continuously," and the further recommendation that our delegates should meet before the session of the American Medical Association to "formulate policies and recommendations for their guidance based on experience and suggestions from the officers and standing committees of our own Society." Our delegation did not concur with the recommendation of the Board to the effect that "the railroad and Pullman fare of the delegates from our Society to the American Medical Association should be paid by the Society."

As evidence that many are chosen who do not later serve, we call your attention to the personnel of the 1923 delegation from our Society to the House of Delegates of the American Medical Association: Charles C. Cracraft, Washington County, elected delegate for 1922 and 1923; Walter F. Donaldson, elected delegate for 1923 and 1924; William H. Mayer, Allegheny County, elected alternate designate for 1922 and 1923; Frederick L. Van Sickle, Lackawanna County, elected alternate-designate for 1923 and 1924; J. Newton Hunsberger, Montgomery County, elected alternate at large for 1922 and 1923; William A. Womer, Lawrence County; John M. Cooley, Armstrong County; Albert E. Blackburn, Philadelphia County; and Walter F. Enfield, Bedford County, *appointed* by the President and Secretary.

J. Newton Hunsberger, *Chairman,*
Walter F. Donaldson, *Clerk.*

REPORTS OF COMMITTEES

COMMITTEE ON PUBLIC HEALTH LEGISLATION

To the President and House of Delegates:

The Committee on Public Health Legislation, appointed by President Litchfield, organized and united with the Committee of the Homeopathic Medical Society and the Eclectic Medical Society and continued the Medical Legislative Conference of Pennsylvania.

The 1923 session of the Legislature was an extremely busy one. Numerous bills were introduced, a detailed account of which was furnished to each member of the several societies through the bulletins issued by the Conference. The various bills were opposed or endorsed, according to the decision of the Conference.

It is very evident from advice received that Compulsory Health Insurance will again be brought to the fore and every effort made to have it established in Pennsylvania.

The Conference wishes to urge every member of the medical profession to register on registration day and take part at the primary election.

The county societies should invite the candidates for the Legislature to their meetings and discuss with them the stand the profession will take on all measures pertaining to the health and welfare of the people of the commonwealth. With the united medical profession strongly welded for the enactment of good public health legislation, much can be accomplished in Pennsylvania that should place our state among the leaders.

The Conference desires to thank the profession in general and also the Committees on Public Health Legislation of the various county societies for their help during the past session of the Legislature.

G. A. Knowles, *Chairman.*

COMMITTEE ON DEFENSE OF MEDICAL RESEARCH

(SUBSIDIARY TO THE COMMITTEE ON PUBLIC HEALTH LEGISLATION)

To the President and House of Delegates:

During the past year our Committee coöperated with the Allegheny County Medical Society and the Academy of Science and Art of Pittsburgh in presenting to the general public a lecture by Mr. Ernest Harold Baynes on "The Truth About Vivisection," on February 1, 1923.

We coöperated with the Medical Legislative Conference of Pennsylvania in the defeat in the 1923 Pennsylvania Legislature of a bill opposing compulsory vaccination against smallpox.

Respectfully submitted,

James D. Heard, *Chairman,*
L. M. Hartman,
Joshua E. Sweet.

COMMITTEE ON PROMOTION OF EFFICIENT LAWS ON INSANITY

(Subsidiary to the Committee on Public Health Legislation)

To the President and House of Delegates:

The committee secured copies of all bills relating to the subject of insanity as they were presented during the past session and were painstaking in presenting their views to the members of the Legislature upon the bills thus considered as the result of such study, and attended several hearings before the various committees.

The committee gave its active support to the measures introduced by the Bureau of Mental Health of the Department of Public Welfare. The principal bills presented by the department were passed, including a bill changing the practice of the insanity law, which has made material modifications in methods of commitment and general care of the insane. This bill contains many of the provisions of the Steedle Bill presented for the consideration of a former Legislature and its provisions are in keeping with the best practice in other states.

The committee worked for the passage of a bill providing for $6.00 per week maintenance rate for the indigent insane in hospitals for the acute insane. This bill was passed by both houses, but the amount available for the hospitals was materially reduced as a result of the retrenchment policy of the present administration. To conduct the hospitals within the amount now available for the hospitals will require the most stringent reduction of expenses that can possibly be effected, and the effect in reduction of personnel beyond the point requisite for proper conduct of the hospitals will have a serious result upon its operations. Ordinary repairs, upkeep of equipment, will, together with other running expenses, be necessarily greatly reduced. The committee in this statement can merely express its hope that the next Legislature may find ample funds for the proper medical conduct, maintenance and development of its State Hospitals for the Insane.

The committee desires to express its grateful appreciation for the attention given its requests by members of the Legislature, and especially the support given its work through activities of the Medical Legislative Conference. Respectfully submitted,

HARRY W. MITCHELL, *Chairman,*
OWEN COPP,
EDWARD E. MAYER,
J. ALLEN JACKSON.

COMMITTEE ON PUBLIC RELATIONS

To the President and House of Delegates:

A major function of the Committee on Public Relations is so to coördinate and utilize the great power of the State Medical Society and its constituent units that not only may the public be safeguarded against preventable morbidity and mortality, but that organized medicine may be given credit for the major part it plays in the accomplishment of this end.

The practical application of this broad formulation calls for: 1. A specific and detailed plan of action against at least one public health menace—a plan with which the whole profession is in accord—a plan which insures successful results. 2. Wide publicity in the name of the state and local societies, telling every Pennsylvania citizen of this plan, and telling him what he should do to make it effective.

Diphtheria was selected as a public health menace, preventable and curable by methods standardized by the medical profession. Publicity was inaugurated by a Diphtheria Week campaign, well organized and effectively carried out in most of the municipalities of the state; continued, not only by the press, but by the schools, the churches, organized labor, the Legion, municipal authorities, Red Cross, Antituberculosis Society, Rotary and Kiwanis Clubs, and many other civic, business and welfare organizations.

The State Department of Health, through Dr. Charles Miner and Dr. Bruce McCreary, are in full sympathy with these activities, and have thrown their field and office force into the campaign of both publicity and active immunization. More than five million people have been reached in a convincing way and the latest statistics on diptheria suggest that convincing results may be expected.

Respectfully submitted,

FREDERICK L. VAN SICKLE,
WILMER KRUSEN,
S. R. HAYTHORN,
W. M. BORTZ,
FRANK G. HARTMAN.
FRANCIS J. DEVER,
ELLIOTT EDIE,
J. NORMAN HENRY,
EDWARD MARTIN, *Chairman.*

COMMISSION ON CANCER

(SUBSIDIARY TO THE COMMITTEE ON PUBLIC RELATIONS)

To the President and House of Delegates:

The meeting of the Commission on Cancer was held during the annual session of the Society in 1922, in Scranton. Inasmuch as the national association is so active in general publicity, it was decided that no new public work should be undertaken by our Commission, but that they should coöperate at every opportunity with the work of the national society in this state.

It was further decided, however, to undertake a statistical study of the cancer question in the state this year. This work is now being actively pushed. The collection of statistical material will occupy the entire calendar year and it is hoped that an interesting and valuable special report may be made later.

J. M. WAINWRIGHT, *Chairman,*
R. J. BEHAN,
FRED FISHER,
HARRY H. PENROD,
EDW. A. WEISS,
C. Y. WHITE,
HENRY D. JUMP.

COMMITTEE ON MEDICAL BENEVOLENCE

To the President and House of Delegates:

Since our last report one of the beneficiaries has ceased to need assistance from the benevolence fund; one new case has been given assistance throughout most of the year; and a small amount was given another physician in a special emergency. There are, therefore, but two members of the Society regularly receiving assistance from the fund. There has been some annoying delay due to the fact that the treasurer of the State Society has not promptly placed funds for the use of this committee in the hands of the treasurer of the committee. We hope this matter has been remedied.

We desire again to call the attention of the members of the Society to the existence of this fund, and while not encouraging improper applications for assistance, we believe there are members in need of help who hesitate to apply for it because it seems like accepting charity. This is not really the case; it is merely paying back to members of the Society the funds which they have contributed to it during a long series of years.

Respectfully submitted,
WILLIAM T. SHARPLESS, Chairman.

Receipts

Balance in bank, Aug. 5, 1922	$80.55	
Received from treasurer, Nov. 22, 1922	378.66	
Received from treasurer, June 26, 1923	332.46	
		$791.67

Disbursements

Nov. 23, 1922	$120.00	
Jan. 6, 1923	120.00	
March 1, 1923	60.00	
April 12, 1923	120.00	
May 29, 1923	20.00	
July 5, 1923	120.00	
		560.00
Balance in bank, Aug. 5, 1923		$231.67

Respectfully submitted,
E. B. Heckel, Treasurer.

COMMITTEE ON ARCHIVES

During the past year the Committee on Archives has inaugurated plans for completing the files of published transactions in the Secretary's Office, from 1881 to date.

We have filed in our space in the Harrisburg office, a copy of the War Memorial of the Allegheny County Medical Society. This published report is entirely in keeping with the dignified and magnificent form in which the Allegheny County Medical Society has perpetuated the World War service of four hundred and fifty of its members.

We note with pleasure that the Philadelphia, Mercer, and Fayette County Medical Societies have committees actively at work upon the history of their respective societies.

We repeat our statement of last year's report to the effect that "if the older men of our Society do not take the proper interest in the history of medicine, our young men will lose much of the higher inspiration for the fullest development of our calling."

It is with great regret that the surviving members of this Committee note, since our last annual report, the death of our fellow-member, Doctor C. L. Stevens. Doctor Stevens might in truth be called the "Nestor" of our archives, he having, during his twenty-one years as Secretary of our Society, sustained a lively interest in the preservation of our records.

Walter F. Donaldson, *Chairman*,
Samuel Gerhard.

PROPOSED AMENDMENT TO CONSTITUTION*

A member of this Society who has been a member for a continuous term of fifteen years, who is not less than sixty-five years of age, may on request of his component county medical society, be made an Affiliate Member provided he holds such membership in his component society as shall relieve him from the payment of dues in his component society. A component society shall not be required to pay any annual assessment for an Affiliate Member. Affiliate Members shall be privileged to participate in the scientific discussion of this Society; they shall not receive the Journal of the Medical Society of the State of Pennsylvania, except by personal subscription; nor shall they be entitled to any benefit from the Medical Defense Fund.

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* Published in the June, 1923, number of the Atlantic Medical Journal.

Dr. O. Pine queries: Why so much uproar about the cancer mortality, the pneumonia mortality, and the tuberculosis mortality? Is not the automobile mortality rapidly diminishing all other mortality statistics?

BUBBLES

Apropos the old rhyme—big fleas have smaller fleas to bite 'em and so on ad infinitum—we hear that the government is importing a critter said to be the natural enemy of the Japanese beetle. Wouldn't it be a grand and glorious feeling if we could just find the natural enemy of the many germs that prey on mankind!

Up to the present we have left the treating of sick souls largely to the preachers. Somebody has certainly missed an opportunity to develop another medical specialty.

This is an age of spiritual ague. If we arn't rushing feverishly around we are suffering from cold feet lest we won't be able to raise the dough to pay for some more rushing around.

The fellow who despises the gang is often the one who lacks the brains or the gumption to get admitted himself.

Everyone has some of the milk of human kindness in his formula, but in some cases it seems to be dry milk.

Wanted: Some system of therapy capable of adjusting the international relations.

In the olden days many a man owed his life to his horse; now many a man owes his death to his car.

The advertisers who howl the loudest about nobody reading their ads., are usually the ones whose ads. are not worth reading.

If you want the world to be your oyster, you first have to learn how to open its shell.

Solomon has glorified the ant and its industry, but so far as we know, no one yet has sung a ballad to the mosquito and its persistence.

Always get the other fellow's goat before he butts you.

Constant dropping may wear away a stone, but not so with humans; constant prodding makes a callous.

Some men have good ideas but they express them so poorly that they remind us of a beautiful girl wearing a ragged dress.

Somebody ought to discover a method of sensitizing public officials to the protein of public opinion, with its accompanying anaphylactic reaction.

While the Session may be dry in one sense, you may be sure it won't be in the other sense.

The best way to induce the members to visit the commercial exhibit would be to put up a sign "No Admittance."

News dispatches tell us that Dr. Banting, discoverer of Insulin, is the most heavily insured man in the world, being insured for $5,000,000. Makes us feel more prosperous just to have him coming to our Session!

THE
MEDICAL SOCIETY OF DELAWARE

ADDRESS

THE ORGANIC BASIS OF THE PSYCHOSIS*

D. J. McCARTHY, M.D.
PHILADELPHIA, PA.

In a study of the physical basis of mental disease we have to consider that first, the critical periods of life are: (a) the prenatal period, (b) the birth period, (c) the developmental period to the 4th year, (d) the adolescent period, (e) the menopause period, (f) the senile period; second, the continuing constructive periods are: (a) that of growth, (b) that of maturity, (c) that of decline.

In a consideration of the physical, or more properly the physico-toxic factors, as a basis for insanity and the insane states, the physiological mechanism of birth and development and decay become of great importance.

If we study a classification of psychoses, we may divide them into those with an inherited taint and those free from a history of insanity in the immediate ancestry. We may further divide these into three groups: (a) the organic, (b) the toxic, and (c) the combination of these two.

There is a growing tendency, accepted by a large number of psychiatrists to consider heredity as sensitizing the individual to the effect of toxic or organic changes; in other words, that in the unbalanced it takes but a small quantity of toxin to produce a mental effect, but that an identical or allied mental state would be produced by a massive dose of this toxin in a normal taint-free brain. This is shown in the dementia præcox group, where the statisticians, show a history of insanity in less than 50% of the cases, and yet this is the one disease that fills our institutions for the insane.

In studying the organic and toxic basis grouping, we would find under organic, the idiots, imbeciles, the dementias due to brain tumors, brain fractures, cerebral hemorrhage, thrombosis and embolism, etc.

In the pure toxic group we would find the acute alcoholic and lead insanity states, and possibly the acute manias and melancholias.

When we study the last grouping of the insanities we are forced to consider them as of mixed toxic and organic basis as follows:

(a) Infectious exhaustion psychosis, where in addition to the direct toxic action of the infection there is evidence of damage to the structures of the heart, kidney, liver, brain, endocrine system, etc.

(b) Alcoholic psychosis (other than acute delirium) shows disease of kidneys, liver, gastro-intestinal tract, circulatory, endocrine systems, etc., and eventually gross and microscopic damage to the brain.

(c) Paresis. Here we have in addition to the gross and microscopic changes in the brain, the multiform intoxications from syphilis and disease of the circulatory apparatus, the kidneys, liver, etc.

(d) Dementia præcox, admitted to be for a large part a toxic process, there is practically always an organic or organic-toxic factor present, even in the degenerative groups.

(e) Involutional melancholia — a disease of involutions with chronic intoxication as some obscure simple or multiple organic basis.

(f) Senile psychosis — due to the combined factors of arterio-sclerosis with an added intoxication from the kidneys and at times the liver and other organs, with a cerebral anemia, edema and atrophy.

(g) Paranoia. The pure insanity if carefully studied will often show an organic basis with secondary chronic toxemia added to the already congenitally cracked brain.

It is hardly worth while to do more here than mention the acute psychosis developing in perfectly normal people as a result of acute kidney intoxication, liver disease, cardiac failure, cerebral anemia after hemorrhage, etc., or that other extensive group of acute and at times continuing delirium of the acute infections such as typhoid, influenza, lethargic encephalitis, syphilis, tuberculosis, etc. The psychosis of the puerperium, the lactation period, and the menopause are also a group of mild toxic and endocrine-toxic origin. All these conditions may occur in normal individuals with good heredity, and quite as frequently as in those with a history of insanity in the immediate ancestry.

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* Read before the Medical Society of Delaware, Dover, October 10, 1922. Professor of Medical Jurisprudence, University of Pennsylvania. Neurologist to St. Agnes Hospital.

It is quite true that in these groups the sensitized unbalanced brain is in greater danger of disturbance and damage than is the normal brain. We should, however, keep in mind that the brain is an organ of registration of thought, so to speak. It depends for its normal functioning on the blood, and the blood for its cerebral nutritional qualities on the normal function of the liver, gastro-intestinal tract, kidneys, bone marrow, lungs, and the endocrine mechanism. If any of these be deranged we have an abnormal functioning of the brain, and when it comes to the production of thought, a change in the output depending on the viscereal disease and the resultant toxemia; and so it is not only with quality but equally so with quantity of the blood. The anemic states have their own thought pictures.

In every case of insanity it is the duty of the doctor to elicit and evaluate two factors: (a) To what degree is the brain sensitized by heredity or chronic intoxication or vascular disease? (b) What is the toxin at work to produce this particular form of mental derangement. The former is a matter of history of the testing of mental and physical reflexes; the latter a problem of advanced internal medicine—a study not only of disease of organs but of derangement of insufficient or inefficient functioning of organs not cellularly involved or diseased.

I am not sure that the cellular pathology of Virchow has not done more to impede the progress of medicine than any particular value it gave to it. There is no question that people die of functional derangement of the kidneys or liver or heart or brain when the cells show absolutely no change under the highest powers of the microscope. There is no question that people go insane and stay insane as a result of functional derangement of the kidneys, heart, etc. There is no question that chronic incapacitating illness is not infrequently the result of pure functional derangement of the various viscera. So that we now are developing a new concept of medicine in two directions:

(a) Has the individual a cholecystitis? If so, why does he have it? Where did it come from? What was the point of infection and why? If it can produce an acute abscess, what is the use of removing the abscess, if we leave the source of it to do damage elsewhere? And so it is with pathological conditions of the thyroid, of the kidneys, etc.

(b) And in the other direction—Is this man not in vigorous working health? If so, why not? Has he organic diseases? No. Well and good. Then why is he sick? Or rather, why is he not well? There must be a malfunctioning of some or all of his tissues and it is the duty of the doctor to find it and eliminate it.

In order to do this it is often necessary not only to study the present status of the patient, but to go back to birth or even to the antenatal period and estimate the effect of disease at the critical period or subsequent periods. If we try to understand a disease like dementia præcox it is necessary in the various groups to make such a study. In the infectious-toxic group based on pulmonary disease, an analysis of the study and reasoning will give us a conception of a study of a case somewhat different from the usual clinical summary.

(Concluded in the October Journal)

EDITORIALS

THE MIGRATORY CONSUMPTIVE

One can hardly conceive of a more cruel, inhuman act than to send an indigent consumptive adrift to the South-West to chase the elusive rainbow of health, and yet thousands of them migrate to Colorado, Texas, Arizona and California on the advice of physicians. Picture the pathetic figure of a poor consumptive, in the throes of this dread disease, yet with a gleam of hope that the "climate" will perform the miracle and restore him to health. With his meagre belongings and the last dollar spent on railroad fare, he lands in Colorado Springs, Denver, El Paso, San Antonio, Phœnix or Los Angeles only to find that the cheap, insanitary lodgings, poor food and lack of ordinary comforts are aggravating his condition. His cough is more harassing, his fever more consuming, his digestion more impaired, his body wasting from day to day. Helpless, homesick and destitute, he applies to some charitable organization only to find that the assistance he can receive is small and inadequate and that the institutions which take care of consumptives are overcrowded, with a long waiting list. In one year, 1920, according to statistics compiled by Jessamine S. Whitney, Statistician of the National Tuberculosis Association, 7,319 consumptives were cared for by municipal agencies in six cities of the South-West, or an average of one indigent consumptive to every 155 inhabitants. A few of these cities are worse off than others. In Phœnix there was found one indigent consumptive to every 58 of the population; in Colorado Springs, one to every 78; in El Paso, one to every 71; in Denver, one to every 156; in Los Angeles, one to every 186; and in San Antonio, one to every 264.

Aside from the enormous and unjust burden imposed upon these communities that are obliged to care for the indigent consumptives from other states, there is a medical aspect to this problem which should be considered by the physician who recommends a change of climate. The essentials of treatment of tuberculosis are: First, rest; second, sufficient nourishing food; and third, fresh air. Favorable climatic conditions make an outdoor life more possible and agreeable, but do not replace the rest and food. How much rest can a consumptive get when he is obliged to look for his daily sustenance either by getting odd and unremunerative jobs or by "hand-outs" from charitable organizations? How much food can he get on his meagre allowance? How much fresh air can he get in lodging houses made up of windowless "cubicles" as are found, for instance, in Denver? What chance of recovery or even improvement has a poor consumptive when placed under such extremely unfavorable conditions?

These are the questions the doctor should ask himself before advising the poor consumptive to "go West." A. R.

134th ANNUAL SESSION

The 134th Annual Session of the Medical Society of Delaware will be held at Middletown on Monday and Tuesday, October 8th and 9th, 1923, under the Presidency of Dr. Dorsey W. Lewis, of Middletown. Those of us who have attended other meetings in Middletown know what excellent hosts are to be found there, and as we expect an unusually fine scientific program, all who will take the trouble to attend the meeting will be amply rewarded. We would like this session to break all records for attendance and for the number and quality of the papers read. The program, unfortunately, is not yet completed, and there is still an opportunity for those who desire to present papers to do so, but it is requested that all such get in touch with the secretary, Dr. LaMotte, at once. We are most anxious that the majority of our papers be presented by our own men; we consider it a serious reflection when we are compelled to call on a number of guests to complete a creditable program. Please bear the dates in mind, and be there; better still, arrange to read a paper.

ANNUAL DUES

The state secretary advises us that there are several of the members who have not as yet paid their dues for 1923. Of course, such members have lost their medical defense, and will not be included in the mailing lists of this Journal after the October number, unless all indebtedness is paid; further, they will have no vote in the election of the next President, a privilege one should cherish. But the two most important effects of this kind of carelessness are: (1) No county delegation can be seated in the House of Delegates unless and until the per capita assessment of four dollars has been paid into the state treasury thirty days before the annual session. We hope there will be no repetition of the misunderstanding of last year on this point. (2) The funds of the treasury will not be sufficient to pay the per capita assessment of two dollars for this Journal, and when the Pennsylvania Society calls upon us for this money we do not want to ask them for additional time. Our society is much older than theirs, a half a century older, and our pride should be accordingly greater. Please see to it that there is no failing on this point of finances; the publication expenses are due and payable to the Pennsylvania Society on October 1st.

STATE LAWS

One of the most important business matters to come up at the next House of Delegates will be the question of instituting a test case in the Delaware courts to determine the constitutionality of the state laws prohibiting the prescribing of alcoholic medicinals. The precedent has been set by physicians of New York, and they have won their case. Let every member consider this very important matter impartially, and at the next meeting of each county society there should be issued to each delegate and to each delegation definite instructions on this point.

CORRESPONDENTS

There have been appointed twelve correspondents throughout the state, whose duty it is to send to the editor of the Delaware section each month such items of a professional, personal, institutional or political character as may be of general interest to the profession of the state. So far only *one* man has been sufficiently conscientious or considerate to perform this duty, and he is about as busy as the next one. Being "too busy" is all humbug; being too indifferent is more like it. Come on, boys, speed up.

W. E. B.

LITTLE JOURNEYS IN GENERAL PRACTICE

(BEING A FEW SIDE VISITS TO VARIOUS HILLS AND VALLEYS AND BYROADS IN THE AVERAGE DOCTOR'S TRAVEL THROUGH LIFE AND EXPERIENCE)

BY A GENERAL PRACTITIONER

PROLOGUE

Dear Mr. Editor:

I wish particularly to call your attention to several facts before I start my little series of—let us call them "unprofessional monographs."

I am a general practitioner—one from a small town at that. I lay no claim to specialism in any line, unless it be that of general medicine, general surgery, gynecology, diseases of children, ear, nose and throat, electrotherapeutics, etc. I do, however, claim that I can cut out a patient's appendix as readily as I can give him a dose of calomel; and I have ofttimes been called upon to deliver a woman in labor that some "big man" from the city has "given up" as a hopeless case.

Being a "general physician" in a rural or town community, I do everything in the medical line, except to pull teeth, pare corns and act as midwife after a baby has been delivered. Therefore, I feel justified in "saying a few things" about our profession and its specialists, internists, surgeons, diagnosticians, etc., for I am all of them combined in one to a certain degree.

If the readers of the Atlantic Medical Journal object to some of my "unprofessional statements" as uncalled for or jocular, please remember that I have spent two terms abroad (in Europe) and that I have met many of my professional brethren in all kinds of predicaments, both here and across the water. Also I am a student of human nature, and realize that no priest of the Church has ever done as much for humanity as the doctor. It is all right to call a Christian minister in time, just before you are ready to depart from this world for the next, but you call the doctor at any old time, be he a good one, a great specialist or a plain general practitioner like myself.

BOMBASTISM

It has been my fortune, or misfortune, on several occasions to be forced to call into consultation a "noted specialist" or a well-known physician of some other town or community.

I have received the visiting consultant as a brother. I have welcomed him as a man to help deliver me and my patient's family from a troublesome situation. I have done all I can possibly think of or, after hours of book study, suggest. The great Doctor Blank is called upon.

If Dr. Blank were a human being he would readily see at a glance that the patient is far beyond human help. He could examine the patient, advise with the family physician, and tell the waiting friends that the case is hopeless, everything possible has already been done, etc., etc., beyond measure—the old orthodox formula.

But no, the new, up-to-date consultant says something after this fashion, "My God! Why was I not called sooner?" He takes the family doctor into another room and asks how much the patient is worth in Liberty Bonds or real estate. He then says, "You stay here; let me talk to them."

He presents himself to the expectant waiting relatives and friends, and unbuttons his mental vest of the following:

"Dr. Dash has done all possible in his power. He is a general practitioner. He does not understand the minute, critical points of a case such as this. I believe that had I been called sooner something might have been done. As it is, I will leave the case to Dr. Dash, who is really doing all he can. The patient is beyond all hope. I have suggested several treatments Dr. Dash can give, but I fear it is too late. However, even though I am a very, very busy man, I am at your service. Call me if your patient does not recover. If he does get better, you must thank Dr. Dash for following out my suggested treatment."

Does this sound somewhat exaggerated to you? Well, it isn't. The said Dr. Blank enters the household in a most pompous manner. He is super-dignified. He is autocratic. He shows to the simplest onlooker that he is an authority! If the patient lives—Dr. Dash "followed his suggestions!

Dr. Dash may collect part of his fee in either case. Dr. Blank collects his super-fee before he leaves the house, under any conditions.

Who is the real helper in this case, the poor, lowly, average family doctor, or the big, puffy, powerful specialist who is called in consultation?

I've had many little journeys like this; perhaps have collected $25.00, signed the insurance blanks, death certificates, etc. Doctor Blank got $150.00, looked pompous and big, had a good lunch and a nice ride, and avoided all subsequent annoyances. Bombast!

Dr. O. Pine queries: As certain phrasemongers assure us that 90% of all illnesses recover without medical assistance, and as, after listening to the claims of various specialists, it is very evident that the portions of the remaining 10% that escape death owe their salvation to the specialists, can you wonder that the mere physician is approaching alleged extinction?

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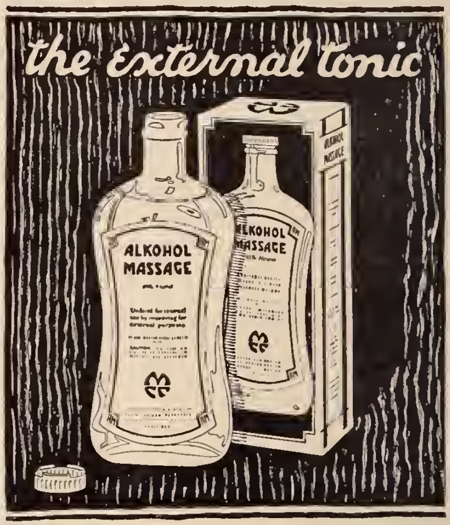

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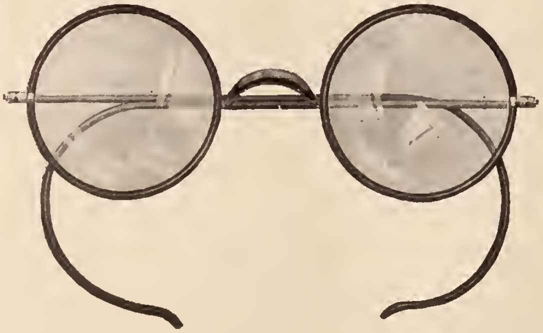

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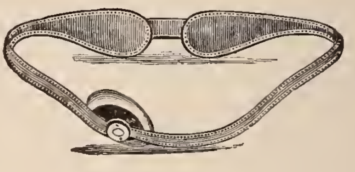

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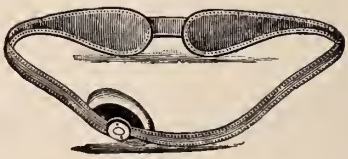

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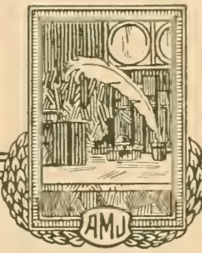

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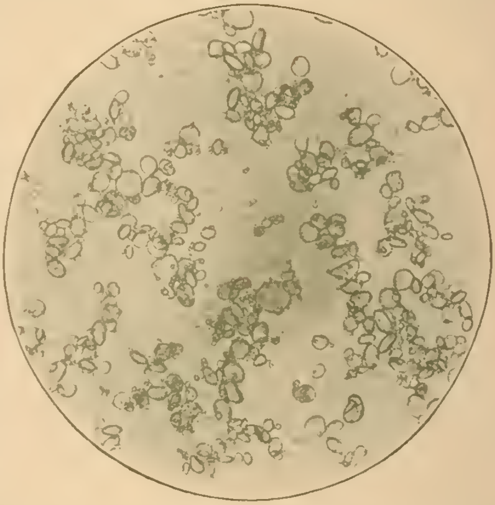

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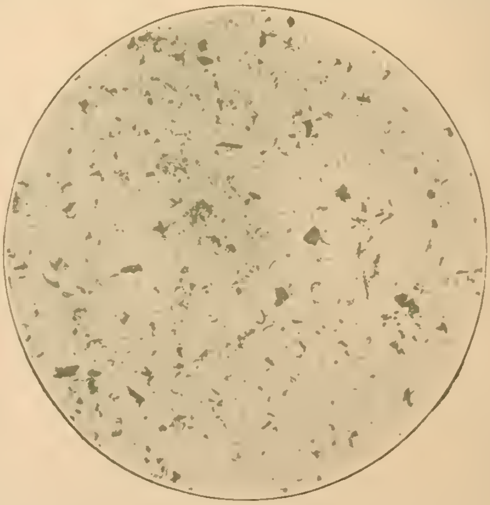

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